

## **TECHNICAL FISHERY REPORT 89-01**

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Alaska Department of Fish and Game  
Division of Commercial Fisheries  
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### **Alaska Peninsula-Aleutian Islands Area Catch and Escapement Statistics, 1986**

by

**James N. McCullough**

The Technical Fishery Report Series was established in 1987, replacing the Technical Data Report Series. The scope of this new series has been broadened to include reports that may contain data analysis, although data oriented reports lacking substantial analysis will continue to be included. The new series maintains an emphasis on timely reporting of recently gathered information, and this may sometimes require use of data subject to minor future adjustments. Reports published in this series are generally interim, annual, or iterative rather than final reports summarizing a completed study or project. They are technically oriented and intended for use primarily by fishery professionals and technically oriented fishing industry representatives. Publications in this series have received several editorial reviews and at least one *blind* peer review refereed by the division's editor and have been determined to be consistent with the division's publication policies and standards.

ALASKA PENINSULA-ALEUTIAN ISLANDS AREA  
CATCH AND ESCAPEMENT STATISTICS, 1986

By

James N. McCullough

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## ABSTRACT

Commercial catch statistics, escapement estimates, and age, sex, and size data for chinook salmon (*Oncorhynchus tshawytscha*), sockeye salmon (*O. nerka*), pink salmon (*O. gorbuscha*), chum salmon (*O. keta*), and coho salmon (*O. kisutch*) are summarized for the Alaska Peninsula-Aleutian Islands Management Area for 1986. The total area commercial salmon harvest was 10,269,405 fish with the majority (70%) of the fish harvested in the South Peninsula. The catch composition was 17,340 chinook, 3,694,526 sockeye, 4,096,738 pink, 2,059,686 chum, and 401,115 coho salmon. The 1986 catch was 9% lower than the 1976-85 average of 11,218,840 salmon. Sockeye, chum, and coho catches were above the 1976-85 average, while the chinook and pink catches were below average. The majority of the chinook and sockeye salmon were caught in North Peninsula fisheries. The majority of the pink, chum, and coho salmon were caught in South Peninsula fisheries. The Alaska Peninsula escapement was 3,946,790 fish composed of 23,319 chinook, 807,537 sockeye, 2,082,663 pink, 865,499 chum, and 167,772 coho salmon. The Alaska Peninsula 1986 salmon escapement for all species combined was 6% lower than the 1976-85 average. The chinook, sockeye, pink, and chum escapement was respectively 53% higher, 21% lower, 2% lower, and 14% lower than the 1976-85 average; coho escapements were not closely monitored. The largest chinook escapements were on the North Peninsula at Nelson Lagoon and the Meshik River. The largest sockeye escapements were on the North Peninsula at Bear and Nelson Rivers. Pink escapements were largest on the South Peninsula at Suzy, Mino, Settlement Point, Middle, Coal, and Southern Creeks. Chum escapements were largest on the South Peninsula at Canoe Bay River, Belkofski Bay River, Russel Creek, and Joshua Green River. Age-1.5 fish accounted for 32% of the chinook harvest on the North Peninsula. Age-1.3 fish accounted for 42% of the sockeye harvest on the South Peninsula, followed by ages 2.3 (31%), and 2.2 (21%). Age-2.3 fish accounted for 37% of the sockeye harvest on the North Peninsula, followed by ages 1.3 (30%), and 2.2 (25%). Age-2.2 and -2.3 fish accounted for 35% each of the sockeye escapements on the North Peninsula, followed by ages 1.3 (15%), and 0.3 (10%). Age-0.3 fish accounted for 76% and 77%, respectively of the chum harvest on the South and North Peninsula, followed by age 0.4 (21% and 22%, respectively). Age-2.1 fish accounted for 70% of the coho harvest on the North Peninsula, followed by age 3.1 (25%). The average chinook length in the North Peninsula catch was 728 mm, and the male to female ratio was 0.6:1. The average sockeye lengths in the South and North Peninsula catch were 559 mm and 554 mm, respectively. The average sockeye lengths in the South and North Peninsula escapement were 545 mm and 529 mm, respectively. The sockeye male to female ratios were 1.1:1 and 0.7:1, respectively, in the South and North Peninsula catches, and 1.0:1 and 1.1:1, respectively, in the South and North Peninsula escapement. The average chum lengths in the South and North Peninsula catch were 585 mm and 568 mm, respectively, and the male to female ratio was 1.1:1 and 0.6:1. The average coho length in the catch was 592 mm for the North Peninsula, and the male to female ratio was 1.1:1.

KEY WORDS: Alaska Peninsula, Aleutian Islands, salmon, catch, escapement, biological sampling, age, length, sex

## INTRODUCTION

The Alaska Peninsula-Aleutian Islands Management Area encompasses the South Peninsula (Pacific Ocean) west of Kupreanof Point to Scotch Cap, the Aleutian Islands from Unimak Pass to the international dateline, and the North Peninsula (Bering Sea) west of Cape Menshikof to Cape Sarichef (Figures 1-6). There are approximately 444 salmon producing streams in the Aleutian Islands segment, and 275 in the Alaska Peninsula segment (ADF&G 1985). The most productive salmon habitat is on the Alaska Peninsula. Currently no commercial salmon fishing occurs west of Unalaska Island in the Aleutian Islands Management Area.

Five salmon species are commercially harvested in the Alaska Peninsula-Aleutian Islands Management Area: chinook salmon (*Oncorhynchus tshawytscha*), sockeye salmon (*O. nerka*), pink salmon (*O. gorbuscha*), chum salmon (*O. keta*), and coho salmon (*O. kisutch*). Annual harvests have ranged between 2,646,800 and 21,073,500 salmon from 1976 to 1985 with an average annual harvest of 11,218,840. Commercial fishing gear is limited to purse seines, hand purse seines, drift gill nets, and set gill nets. The catch by each gear type within a district varies depending on other fishing opportunities, weather, and by regulation (Table 1; ADF&G 1986). The fishing areas and their corresponding statistical areas are listed in Table 2. Economically, sockeye and pink salmon are the primary species in the South Peninsula and the Aleutian Islands fisheries, while sockeye and chum salmon are the primary species in the North Peninsula fisheries.

The Alaska Peninsula-Aleutian Islands Management Area can be divided into three general regions: the South Peninsula, the Aleutian Islands, and the North Peninsula. The South Peninsula is composed of four districts and 43 statistical areas. The Aleutian Islands Area is composed of four districts and 147 statistical areas. The North Peninsula is composed of two districts and 21 statistical areas. Commercial salmon fishing normally begins on the North Peninsula during the last week of May, on the South Peninsula during the first week of June, and in the Aleutian Islands Area during the last week of June.

An overlap area between Alaska Peninsula and Bristol Bay Management Areas occurs in the Port Heiden and Cinder River Sections of the Northern District in May, June, August, and September and in the Ilnik Section of the Northern District after July. In 1986 about 35 Bristol Bay Area drift gill net fishermen and 10 set gill net fishermen fished in the Northern District overlap fisheries (Shaul 1987). The overlap was established by the Board of Fish and Game in 1960 to allow Port Heiden residents the opportunity to fish in traditional areas. Historically Port Heiden commercial fishermen fished for chinook and coho in the Alaska Peninsula Management Area and for sockeye in the Bristol Bay Management Area. Fishermen from Bristol Bay other than those from Port Heiden began using the overlap area in 1986 (Shaul 1987).

Within the Alaska Peninsula-Aleutian Islands Management Area, the majority of the salmon fisheries are directed on local stocks. There are three major interception fisheries in the management area, and all occur on the South Peninsula. The first is during June in the South Unimak fishery and Shumagin Island Section (ADF&G 1986); both fisheries target on sockeye predominantly

bound for Bristol Bay. The second major interception fishery is during June and July in the Southeast District Mainland fishery (East and West Stepovak Sections and Beaver and Balboa Bays) and targets on sockeye predominantly bound for Chignik River. A more recent third sockeye salmon interception fishery is developing in portions of the Shumagin Islands Section during July and August. Probable stocks contributing to this fishery are Chignik, Kodiak, Cook Inlet, Bristol Bay, and the Alaska Peninsula (McCullough 1988b).

The South Unimak and Shumagin Islands Section fisheries were managed during June on the projected Bristol Bay inshore sockeye harvest. Since 1975 the South Unimak and Shumagin Islands fisheries have been allocated 6.8% and 1.5%, respectively, of the latest projected Bristol Bay inshore sockeye harvest (ADF&G 1986). Since 1985 the Southeast District Mainland fishery through 25 July has been allocated 6.2% of the total Chignik sockeye catch which was determined from catches from the Cape Igvak Section of the Kodiak Management Area, the Chignik Management Area, and the Southeast District Mainland fishery (ADF&G 1986). The post-June Shumagin Islands Section fishery is managed on South Peninsula pink and chum salmon runs; presently there is no guideline harvest established for intercepted sockeye salmon in this fishery.

The intent of this publication is to report the numbers, age, sex, and size composition of salmon catches and escapements in the Alaska Peninsula-Aleutian Islands Management Area. These data will provide a base for developing brood tables, forecasting returns, evaluating escapement objectives, and future research and management considerations. This report is intended to serve as a reference document, and therefore interpretation and discussion of the data are limited.

## METHODS

Commercial catch data used in this report were compiled by the Computer Services Section of the Alaska Department of Fish and Game (ADF&G), Commercial Fisheries Division. These data were based on computer tabulations from individual sale receipts (fish tickets) given to fishermen at the time of delivery. Fish tickets and the computer-generated summaries were edited by ADF&G area management staff for errors and omissions. The catch data and age and sex appropriations reflect the present precision of catch reporting procedures. Because extended editing is required, later reports may contain minor differences in the catch information listed in this report. Most of the data in this report were assigned to a statistical week. A statistical week begins at 0000 h each Sunday and ends at 2400 h Saturday. Statistical weeks are numbered sequentially beginning with the week encompassing the first Sunday in January. A list of the 1986 statistical weeks with the corresponding calendar dates are provided in Table 3.

Salmon escapements in the Alaska Peninsula-Aleutian Islands Management Area were monitored by aerial surveys, a tower, and a weir. The Bear River weir, located about 15 mi upstream of the river mouth, was operated from 7 June to 28 August. The Nelson River counting tower, located about 35 mi above the entrance to Nelson Lagoon, was operated from 17 June to 24 July. The sockeye salmon escapement into the Nelson River was based on counts made from a tower

on the bank of the river. Ten minute escapement counts from the tower were made during every daylight hour. Each 10 minute count was expanded into a hourly estimate to calculate the escapement during the day. The escapement during the night was based on 20 minute counts at dusk and dawn. Each 20 minute count was expanded into a hourly estimate to calculate the escapement during the night. The total daily escapement was the addition of the day and night count. Bear River counts were actual numbers of fish passing through the weir. Escapement enumeration was discontinued after 28 August for the Bear River and after 24 July for the Nelson River. The sockeye salmon escapement entering both rivers after counting was discontinued was determined from the rate of decline of sockeye counts over the last few operating weeks. Escapements to other spawning streams were monitored by aerial and foot surveys. Pink and chum total escapements were calculated for surveyed streams through use of aerial survey counts and an assumed average stream life of 15 days for both species (Cousens et al. 1982; Johnson and Barrett 1988). Chinook escapements for surveyed streams were calculated by multiplying the peak escapement count by 1.92 (Neilson and Geen 1981; Barrett et al. 1985). When weirs and counting towers were lacking sockeye escapements for shallow, clear water streams were calculated by multiplying the peak escapement count by 1.25 (A. Shaul, personal communication) and by 2.0 for all other systems (Barrett 1972; Barrett et al. 1985). Total coho escapements were determined by multiplying the peak count by 2.4 (Minard 1986). No attempt was made to estimate the escapement into systems not monitored by aerial surveys. Escapement estimates of sockeye, pink, and chum salmon in the Alaska Peninsula are considered reliable, while chinook and coho estimates and all salmon estimates in the Aleutian Islands are considered minimal counts.

Catch samples were collected weekly throughout the season from fish caught in the major fishing areas and on an as-available basis from minor fishing areas. Most of the data in this report were stratified by statistical week and compiled using a personal computer. Age composition and associated standard error were computed for the catches and escapements sampled for each statistical week. Total catch by age within a statistical week was determined by multiplying the statistical week's proportion for a particular age by the catch of that statistical week. Standard error for a particular age within a statistical week was determined by taking the square root of the variance as given by Cochran (1977) in equation 3.12 (without the finite population correction factor). The standard error provides a measure of the relative accuracy of the estimate but is not valid for confidence intervals. No standard errors or variances were calculated across statistical weeks. Catch by age across statistical weeks was obtained by simple summation.

Mean lengths were calculated from an unweighted composite of the data collected from each area sampled. Sex and age compositions were computed by statistical week for each area sampled. Hypothesis testing of the age composition across time was accomplished by using the chi-square statistic. Length and weight relationships were derived from nonrandom samples from each area sampled.

Catch sampling occurred at King Cove from 11 June to 21 July, where the majority of the South Peninsula catch was delivered, and at Port Moller from 4 June to 1 September, where the majority of the North Peninsula catch was landed. Fish were randomly sampled before sorting by cannery personnel from

tenders delivering from preselected areas. The harvest area of each tender sampled was determined through vessel operator interviews and fish ticket information.

Tender operators purchased fish from all gear types operating within their immediate area. This precluded compilation of separate age, sex, and size composition estimates by gear type except where the catch was by a single gear type. Tender operators purchase fish from the fishermen on a first come, first serve basis. Although fish were purchased by species thorough remixing of fish by quality and species aboard the tender occurred during subsequent purchases, transport, and off-loading. Since all catch sampling occurred before sorting within the cannery there was no preselection of fish other than from delivery areas; each sample was considered representative of the harvest within a sample area.

Escapement sampling was conducted weekly using a beach seine at Nelson River and with a weir trap at Bear River. Although the initial sampling plan specified a 240-fish sample to be collected 1-2 days a week, the sample was usually collected throughout the week at Nelson River and as planned at Bear River, except in weeks 30 and 32. At Nelson and Bear Rivers a weekly escapement sample of 240 sockeye salmon was chosen to describe the dominant age class composition of the population with a  $\pm 5\%$  precision and a 0.90 probability of being accurate (Thompson 1987).

Escapement sampling was also conducted at Sapsuk River, (a tributary of Nelson River), Ilnik Lagoon, Acheredin Lake, and Sandy Lake. A single escapement sample was collected at or near the peak of the escapement except at Sapsuk and Sandy Rivers where post-spawning fish were sampled. Scales were collected at Ilnik Lagoon and Acheredin Lake, while otoliths were collected at Sapsuk and Sandy Rivers. A 600-fish sample was collected during all single sampling events, except at Sandy River where a 300-fish sample was obtained and Sapsuk River where a 40-fish sample was obtained. For single sampling events on systems without historic age information, a 600-fish sample was chosen to describe the dominant age class composition of the population with a  $\pm 5\%$  precision and a 0.90 probability of being accurate; for Sandy River where historic information indicated two dominate age classes a 311-fish sample would give similar results (Thompson 1987). In the Sapsuk River only 40 fish were available for sampling and in Acheredin Lake only 47 fish were sampled.

Age was determined by examining a single scale taken from the preferred area (Bilton and Ricker 1965; Mosher 1968) or from otoliths (MacLellan 1987). The preferred area is located on the left side of the fish approximately two rows above the lateral line on the diagonal from the posterior insertion of the dorsal fin to the anterior insertion of the anal fin (INPFC 1963). One scale was taken from each sockeye and chum salmon, two scales from each coho salmon, and three scales from each chinook salmon. The additional scales were taken from chinook and coho salmon because they have more scale regeneration than other salmon. For coho salmon a single scale provides only 50% usable age information, while two scales per fish provide 80-90% usable age information (B. Monkiewicz, personal communication). A microfiche reader was used to read an acetate impression of the scale (Clutter and Whitesel 1956). Because of scale reabsorption otoliths from sockeye salmon were collected from carcasses in the Sapsuk and Sandy Rivers. Otoliths were placed in a

water medium and read using a binocular microscope (Lux 1971). Ages were recorded in the European notation (Mosher 1968) in which the first digit is the number of winters the fish spent in fresh water before smoltification; the second digit is the number of winters the fish spent in the ocean. Total age is the sum of these two numbers plus one to account for the incubation time. The accuracy of age determination was not tested. It was assumed that experienced scale readers would be in 90% or greater agreement.

Length measurements were taken from mid-eye to fork-of-tail using a caliper or meter stick with 1-mm gradations and reading the measuring device to within 1 mm. Accuracy of a length measurement was within 5 mm.

Sex was determined by external morphological examination of kipe development, belly shape, trunk depth, and jaw shape or by internal observation of the gonads. The accuracy of sex determinations was not tested. The accuracy of sex determination was probably lowest for ocean-bright migratory fish which display limited sexual dimorphism prior to capture and highest for terminally-captured fish which generally have some development of secondary sexual characteristics. Sex determination of chinook and coho salmon using external secondary sexual characteristics was believed to have the lowest accuracy rate. A few chinook and coho salmon externally classified as male or female were also examined internally to verify the sex. Because opening the fish to expose the gonads usually results in loss of the eggs and a lower quality product, this was not routinely practiced.

## RESULTS AND DISCUSSION

This report summarizes the 1986 catch and escapement statistics from McCullough (1988a). All statistics not specifically cited are found in McCullough (1988a).

In 1986 commercial fishermen in the Alaska Peninsula-Aleutian Islands Management Area harvested 10,269,405 salmon (Table 4) and made 12,065 landings. The 1986 catch was approximately 8.5% lower than the 1976-85 average harvest and 12.3% less than the 1985 catch. The lesser amount was primarily due to decreased catches of pink salmon in South Peninsula and Aleutian Islands fisheries.

Salmon were commercially harvested in the Alaska Peninsula-Aleutian Islands Area by hand purse seine, purse seine, set gill net, and drift gill net. The catch by each gear type within a fishing area (Table 1) varied depending on other fishing opportunities, weather, and by regulation (ADF&G 1986).

In 1986 125 purse seine, 165 drift gill net, and 114 set gill net limited entry permits were fished in the Alaska Peninsula-Aleutian Islands Management Area. The majority (84%, 61%, and 82% for purse seine, drift gill net, and set gill net, respectively) of Alaska Peninsula-Aleutian Islands Management Area permits were fished by Alaska residents.

The commercial catch composition for the Alaska Peninsula-Aleutian Islands Management Area was 17,340 chinook (0.2%), 3,694,526 sockeye (36.0%), 4,096,738 pink (39.9%), 2,059,686 chum (20.0%), and 401,115 coho (3.9%)

salmon (Table 4). The South Peninsula accounted for approximately 70.5%, the Aleutian Islands for 0.9%, and the North Peninsula for 28.6% of the total commercial harvest (Table 5). The South Peninsula catch was harvested primarily by purse seine gear (86.9%), followed by set gill net gear (7.5%), and drift gill net gear (5.6%) (Table 5). The Aleutian Islands catch was harvested exclusively by purse seine gear. The North Peninsula catch was harvested primarily by drift gill net gear (79.9%), followed by purse seine gear (11.1%), and set gill net gear (9.0%).

In the Alaska Peninsula-Aleutian Islands Management Area drift gill net gear accounted for the greatest number of landings (6,483) followed by set gill net gear (3,356) and purse seines (2,707). By gear type, purse seine gear harvested 6,713,729 fish (65.4%), followed by drift gill net gear 2,751,109 fish (26.8%), and set gill net gear 804,567 fish (7.8%) (Table 5).

Fishing effort during the last few years has stabilized, except in the Shumagin Island Section, the Alaska Peninsula-Bristol Bay overlap fishery, and the Northern District in the Harbor Point to Stroganof Point fisheries.

In the Shumagin Island Section a relatively large increase in set gill net activity occurred in 1985 (Shaul et al. 1987; McCullough 1988b). Prior to 1985 there were an average of three to eight set gill net permit holders fishing in the Shumagin Island Section; this increased from 30 to 40 set gill net permit holders in 1985 and 1986. The increased effort was the result of the short openings in the Southeast District Mainland fishery, leaving the Shumagin Island Section as virtually the only viable area open for Southeast District Mainland set gill net fishermen. The Southeast District Mainland fishery was open for 4 d during June (15, 18, 19, and 20 June) and for 4 d during July (9, 10, 17, and 24 July). After 25 July fishing time was based on local stock availability. Increased effort by set gill net and purse seine fishermen in the post-June Shumagin Island Section fishery increased the harvest of all species as compared to the average 1976-85 catch (Table 6). The post-June 1986 harvest of sockeye was 341,811 fish, an increase of 260,255 fish above the 1976-85 average of 81,556 sockeye (Figure 7).

A second fishery where effort increased has been in the Alaska Peninsula-Bristol Bay overlap fishery located west of Port Heiden. In 1986 about 18 drift gill net permit holders from Bristol Bay (in addition to Port Heiden and Cinder River fishermen which normally fish those waters) commercially fished in the Ilnik Section. Fishing effort in the Ilnik Section targeted on sockeye salmon believed to be destined for the Bear and Nelson Rivers in the Alaska Peninsula Management Area. Prior to 1986, Bristol Bay drift gill net permit holders did not fish west of Port Heiden.

A third fishery experiencing increased effort was in the Northern District from Cape Seniavin to Stroganof Point. Beginning in 1981 drift gill net fishermen shifted the fishing effort to the most eastward open boundary of the Northern District (Figure 8). Traditionally fishing in the Northern District has been limited to the area west of Cape Seniavin until 25 June, from 25 June until 5 July to the area west of the Ilnik Section, and after 5 July to the area west of Stroganof Point (ADF&G 1986). The local sockeye stocks in the Harbor Point to Stroganof Point fisheries are from the Meshik and Cinder Rivers, Ilnik Lagoon, Ocean River, Sandy and Bear Lakes, and Nelson Lagoon. In the area from Cape Seniavin to Stroganof Point the

commercial sockeye salmon catch in 1981 represented 4.9% of the harvest in the Harbor Point to Stroganof Point area. By 1986 the commercial catch in the Cape Seniavin to Stroganof Point fishery increased to 55.0% (Table 7). In the Alaska Peninsula-Aleutian Islands Management Area most salmon used for subsistence and personal use are taken either from the commercial catch or caught using commercial fishing gear. The amount of salmon retained for personal use is unknown. The reported salmon subsistence harvest was 18,866 fish amounting to 101 chinook, 8,845 sockeye, 4,247 pink, 1,830 chum, and 3,843 coho salmon (Table 8). The sport catch (Mills 1987) amounted to 16,053 fish composed of 288 chinook, 3,069 sockeye, 8,764 pink, 232 chum, and 3,700 coho salmon.

Salmon escapement in the Alaska Peninsula for those systems having escapement data from weirs, aerial surveys, and foot surveys amounted to 3,946,790 salmon composed of 23,319 chinook, 807,537 sockeye, 2,082,663 pink, 865,499 chum, and 167,772 coho salmon (Table 7). Of the 26 streams surveyed in the Unalaska District of the Aleutian Islands Management Area, the escapement was: 0 chinook, 13,200 sockeye, 136,846 pink, 23 chum, and 0 coho salmon.

### *South Peninsula*

The 1986 projected guideline sockeye harvest for the June South Unimak and Shumagin Island Section fisheries was initially set at 1,107,000 fish, and the chum catch was limited to a maximum of 400,000 fish (ADF&G 1986). After final Board of Fisheries actions the 26-30 June guideline harvest level was lost to Alaska Peninsula-Aleutian Islands Area fishermen reducing the South Unimak sockeye allocation by 15% and the Shumagin Island Section sockeye allocation by 22% (Shaul et al. 1987). The final 1986 sockeye allocation was 770,950 fish for the South Unimak fishery and 156,000 fish for the Shumagin Island Section fishery for a total of 926,950 sockeye salmon. The Shumagin Island Section and the South Unimak fisheries were usually opened concurrently. The South Unimak fishery was open during June for eight fishing periods for a total of 148 h (Shaul 1987). During June the Shumagin Island Section was open for eight fishing periods for a total of 160 h. The South Unimak and the Shumagin Island Section June fisheries produced a harvest of 1,895 chinook, 471,397 sockeye, 291,989 pink, 351,769 chum, and 2 coho salmon (Table 9, 10).

The 1986 harvest in the Southeast District Mainland fishery (Stepovak, Beaver, and Balboa Bays) was 386 chinook, 245,511 sockeye, 490,316 pink, 168,943 chum, and 4,943 coho salmon (Table 11). About 33% of the total harvest was landed prior to 26 July, which amounted to 219 chinook, 206,532 sockeye, 40,771 pink, 51,003 chum, and 770 coho salmon (McCullough 1988a).

South Peninsula fisheries from July through September produced catches of 3,586 chinook, 687,525 sockeye, 3,739,423 pink, 1,394,332 chum, and 235,852 coho salmon, totaling 6,060,718 fish or 83.7% of the total South Peninsula harvest (McCullough 1988a). Excluding Southeast District Mainland catches, the South Peninsula July through September total salmon harvest was 3,200 chinook, 442,014 sockeye, 3,249,107 pink, 1,225,389 chum, and 230,909 coho salmon. The South Peninsula commercial harvest was about 14% below the 1976-85 average catch.



The 1986 catch in all South Peninsula commercial fisheries produced 5,589 chinook, 1,223,089 sockeye, and 4,031,487 pink, 1,749,651 chum, and 235,854 coho salmon (Table 4). Peak catches for chinook salmon occurred during week 29, for sockeye salmon during week 25, for pink and chum salmon during week 32, and for coho salmon during week 31 (Table 12).

Comparison of average sizes in the following sections were not statistically tested for significance.

### Chinook Salmon

A total of 5,589 chinook salmon were harvested in the South Peninsula in 1986 (Table 4). The catch was 25% lower than the 1976-85 average and 29% lower than the 1985 catch. The Southeast District Mainland fishery, Shumagin Island Section, Ikatan Bay Section, and the Unimak District accounted for 99% of the harvest. The Shumagin Island Section harvested 60% of the total chinook catch. Peak catches occurred during week 31 in the Southeast District Mainland fishery, week 29 in the Shumagin Island Section, and weeks 24 and 25 for both the Ikatan Bay Section and the Unimak District (McCullough 1988a). There are no documented chinook spawning areas in South Peninsula waters.

### Sockeye Salmon

In 1986, 1,223,089 sockeye salmon were harvested in the South Peninsula, an amount 31% lower than the 1976-85 average and 45% lower than the 1985 harvest (Table 4). The majority of the sockeye salmon were caught in the Southeast District Mainland fishery, Shumagin Island Section, and the Unimak District. Peak sockeye catches occurred in the Southeast District Mainland fishery in weeks 25 and 28 (Table 11), the Shumagin Island Section in weeks 28 and 29 (Table 13), and the Unimak District in week 25 (Table 14, 15). The majority of sockeye salmon in the Southeast District Mainland fishery were caught by set gill net gear, while in the Shumagin Island Section most were caught by purse seine gear. In the Unimak District the majority were caught by drift gill net gear (Table 5). The average length of South Peninsula harvested sockeye ranged from 537 mm (Cape Lutke Section) to 579 mm (Southeast District Mainland fishery) (Table 16). Overall, the average length was 559 mm. The average male to female ratio ranged from 0.8:1 (Cape Lutke Section) to 1.7:1 (Canoe Bay Section) (McCullough 1988a). Overall, the male to female ratio for the entire South Peninsula was 1.1:1.

The South Unimak fishery (Ikatan Peninsula to Cape Lazaref and the Cape Lutke Section) June sockeye guideline harvest level was set at 770,950 fish (Shaul et al. 1987). The sockeye harvest was 315,370 fish (Table 9). The guideline harvest was not obtained due to the low availability of sockeye salmon within the fishery and restrictions on fishing time due to the 400,000 chum limit. The majority of the sockeye harvested in the South Unimak fishery during June were ages 2.3 (35.7%), 2.2 (32.3%), and 1.3 (25.1%) (Table 17). Females were more abundant than males only during week 24. The June male to female ratio was 0.8:1. The mean length was 545 mm. The Cape Lutke Section had substantially smaller sockeye in the harvest as compared to other June fisheries. Males were larger than females for all areas and ages except for age-1.2 fish in the Cape Lutke Section and age-3.2 and age-3.3 fish in the

Ikatan Peninsula to Cape Lazaref area of the South Unimak fishery (McCullough 1988a). Males in the Cape Lutke Section averaged 537 mm and females 536 mm. In the Ikatan Peninsula to Cape Lazaref fishery males averaged 559 mm and females 546 mm.

The Shumagin Island Section June sockeye guideline harvest level was set at 156,000 fish (Shaul et al. 1987). The sockeye harvest was 156,027 fish (Table 9). The majority of the sockeye harvested in the Shumagin Island Section commercial fishery during June were ages 1.3 (32.0%), 2.2 (29.4%), and 2.3 (27.7%) (Table 17). Females were more abundant than males during weeks 25 through 27 (McCullough 1988a). The male to female ratio was 0.7:1. The mean length was 542 mm. Males were always larger than females except among the age-1.2 fish. Males averaged 546 mm and females 539 mm.

The 1986 intercepted catch of sockeye salmon bound for the Chignik system through 25 July (Southeast District Mainland, Chignik, and Cape Igvak fisheries) was 1,762,741 fish (Probasco et al. 1987). The Southeast District Mainland interception catch of Chignik sockeye salmon was 117,998 fish through 25 July (Probasco et al. 1987). The Southeast District Mainland harvest was 6.7% of the cumulative Chignik sockeye salmon catch. Sockeye salmon harvested in the Southeast District Mainland fishery were predominantly ages 1.3 (66%), and 2.3 (25.7%) (Table 17). Females were more abundant than males during weeks 27 through 28. Overall, the male to female ratio was 1.4:1 (Table 16). The mean length was 579 mm. Males were substantially larger than females among all age classes (McCullough 1988a). Overall, males averaged 589 mm and females 566 mm.

South Peninsula fisheries from July through September, exclusive of Southeast District Mainland catches, harvested 442,014 sockeye. Most (77%) of the fish were harvested in the Shumagin Island Section. The annual harvest of sockeye salmon after June in the Shumagin Island Section has ranged from three (1976) to 341,811 fish (1986) (Figure 7). The 1976-85 post-June average harvest of sockeye salmon was 81,861 fish (Table 6). In 1986 the majority of the sockeye harvested were ages 1.3 (46.5%), 2.3 (32.6%), and 2.2 (16.9%) (McCullough 1988a). The male to female ration was 1.4:1. The mean sockeye length was 572 mm. Males were larger than females among all ages except age 0.3. Overall, males averaged 581 mm and females 560 mm.

Sockeye escapement to the South Peninsula was 95,324 fish (Table 18). The largest South Peninsula lakes, Thin Point and Orzinski, supported 52% of the escapement. Smaller systems in Sanak Island, Middle Lagoon, and Acheredin Lake supported an additional 31% of the escapement. In 1986 escapement sampling was conducted for the first time on any South Peninsula sockeye system. Acheredin Lake was sampled to determine length, age, and sex composition of the run. Age-1.3 fish were dominant at 80.8%, followed by age-1.2 (12.8%) fish, and age-2.3 (6.4%) fish (Table 19). Females were more abundant than males in ages 1.3 and 2.3, while males were more abundant in age 1.2. Overall, the male to female ratio was 1:1 (Table 20). The average male length was 557 mm, while the average female length was 533 mm. The mean length for both sexes was 545 mm.

## Pink Salmon

The 1986 South Peninsula pink harvest was 4,031,487 fish (Table 4). Most (93%) of the catch occurred in post-June fisheries. The catch was 9% higher than the 1968-84 even-year average and 65% lower than the 1984 catch. The Shumagin Island Section supported 37% of the total pink catch. Peak catches occurred during weeks 31 and 32 (Table 11). The total pink escapement was 2,072,821 fish (Table 18). Desired escapements were achieved east of Cold Bay, but many systems from Cold Bay west had escapements below the desired goals (Shaul 1987). The largest escapements were in Southern, Coal, Middle, Settlement Point, Mino, and Suzy Creeks which supported 47% of the escapement (McCullough 1988a). The medium-sized systems of Dry Lagoon and Swedania Point Creeks supported 6% of the escapement. Small systems supported 48% of the escapement.

## Chum Salmon

A total of 1,749,651 chum salmon were harvested in the South Peninsula (Table 4). The catch was 46% higher than the 1976-85 average and 26% higher than the 1985 catch. The majority of chum salmon were caught in the Shumagin Island Section, Southeast District Mainland, June South Unimak, Canoe Bay, Volcano Bay, and Pavlof Bay fisheries. Peak catches in the Shumagin Island Section occurred during weeks 29 through 32, in the Southeast District Mainland fishery during week 31, in the June South Unimak fishery during week 25, in Canoe Bay during week 29, in Volcano Bay during week 32, and in Pavlof Bay during week 31 (McCullough 1988a). Seine gear caught the majority of chum salmon in all areas except for the Sanak Islands and the June Ikatan Peninsula to Cape Lazaref fisheries. The mean chum length varied from 575 mm (Cape Lutke Section) to 604 mm (week 31, Ikatan Peninsula to Morzhovoi Bay area) and averaged 585 mm (Table 21). The male to female ratio varied from 0.6:1 (Ikatan Peninsula to Cape Lazaref fishery) to 1.4:1 (Southeast District Mainland fishery). Overall, the male to female ratio for the entire South Peninsula was 1.1:1.

A total of 656,380 chum salmon were caught in the Shumagin Island Section during 1986 (Table 5). The majority of the June chum harvest (99,048) in the Shumagin Islands Section were ages 0.3 (68.0%) and 0.4 (31.4%) (Table 6). The male to female ratio was 1.5:1 (Table 21). Males were larger than females among all ages except for age 0.5; the mean length of both sexes was 580 mm (McCullough 1988a). After June 557,332 chum were harvested in the Shumagin Island Section (Table 6). The majority of the post-June catch was from ages 0.3 (82.9%) and 0.4 (McCullough 1988a). The male to female ratio was 1.4:1. Males were larger among all ages except for age 0.5. The mean length of all post-June chum salmon was 598 mm.

The June South Unimak fishery (Unimak District, Bechevin Bay Section of the Northwestern District, and Ikatan Bay Section of the Southwest District) catch was 252,721 chum salmon (Table 9). Restrictions on the chum catch (ADF&G 1986) and low fish availability limited the harvest. The majority of the chum salmon harvested were ages 0.3 (62.9%) and 0.4 (36.0%) (Table 22). Females were more abundant in the harvest during week 24, while during weeks 25 and 26 the ratio was nearly equal (McCullough 1988a). Overall, the male to

female ratio was 0.8:1 (Table 21). Males for all areas and ages were larger than females. The mean chum length in the catch was 577 mm.

The chum harvest in the Southeast District Mainland fishery was 168,943 fish. The majority of chum salmon harvested was from ages 0.3 (84.4%) and 0.4 (13.5%) (Table 22). Males were more abundant among ages 0.3 and 0.4, while females were more abundant among ages 0.2 and 0.5 (McCullough 1988a). The male to female ratio was 1.4:1 (Table 21). Males were larger than females among ages 0.3 and 0.5, while females were larger among ages 0.2 and 0.4. The mean length for both sexes was 590 mm.

Most of the remaining chum salmon harvest (671,607 fish) in the South Peninsula occurred in terminal areas. The majority of these fish were harvested in Canoe, Pavlof, Volcano, Belkofski, Cold, and Morzhovoi Bays. The majority of chum harvested in the terminal areas were ages 0.3 (77.2%) and 0.4 (20.5%) (Table 23). The male to female ratio was 1.8:1 (McCullough 1988a). Males were larger among all ages except for age 0.5. The mean chum length in the terminal harvest was 602 mm.

The South Peninsula chum escapement was 568,467 fish (Table 18). The large systems which include Canoe Bay River, Belkofski Bay, and Mortensens Lagoon supported 38% of the escapement. The moderate-sized systems which include Stepovak River, Volcano River, Volcano Sloughs, Lenard Harbor, and Sandy Cove supported 30% of the escapement. Smaller systems supported the remaining 32% of the escapement.

#### Coho Salmon

A total of 235,854 coho salmon were harvested in South Peninsula fisheries (Table 4). The catch was 37% greater than the 1976-85 average harvest and 38% greater than the 1985 harvest. The Shumagin Island Section harvested 85% of the total coho catch. Peak catches occurred during weeks 29 through 31 (Table 13). Coho escapements have not been closely monitored. A few incidental escapement counts were made as listed in McCullough (1988a).

#### *Aleutian Islands Area*

The 1986 Aleutian Islands Area commercial fisheries were directed primarily on pink salmon and secondarily on sockeye salmon. Commercial fishing occurred only in the Unalaska District. Fishing time was restricted due to the weak pink salmon returns. The Aleutian Islands Area was open for 1,674 h, mostly in the Kashega Bay Section for the harvest of sockeye salmon. A total of 89,213 salmon were harvested (Table 4) from 31 landings. The catch was 11 chinook, 7,702 sockeye, 42,621 pink, 38,819 chum, and 60 coho salmon (McCullough 1988a). The catch was 88% less than the 1976-85 average but four times greater than the 1985 harvest. Peak catches for chum salmon occurred during week 27 and for pink salmon during week 32 (Table 24). Stream surveys in the Aleutian Islands were limited to 25 systems on Unalaska Island and a single system on Akutan Island. The total escapement to these streams was approximately 13,200 sockeye, 136,846 pink, and 23 chum salmon (Table 18). Observations of the surveyed streams occurred prior to coho salmon

escapement. There were no documented chinook or coho escapement in the Aleutian Islands. Catch and escapement samples were not collected in the Aleutian Islands Management Area.

### *North Peninsula*

The North Peninsula was managed on the basis of local stocks. The catch was harvested almost exclusively (88.9%) by gill net gear (Table 5). The majority of the harvest was by drift gill net gear (79.9%), followed by set gill net gear (9.0%). Hand purse seine and purse seine gear accounted for the remaining 11.1% of the harvest. Seine gear was operated almost exclusively in terminal chum salmon fisheries, with the major exception of a terminal sockeye fishery in Urilia Bay. Terminal set gill net fisheries for sockeye and coho salmon occur in Cinder River, Port Heiden Bay, Ilnik, Nelson, and Swanson Lagoons, and Urilia Bay. The North Peninsula catch was 11,740 chinook, 2,463,735 sockeye, 22,630 pink, 271,216 chum, and 165,201 coho salmon, totalling 2,934,522 fish (Table 4). Peak catches for chinook salmon occurred during week 26, for sockeye and chum salmon during week 28, and for coho salmon during week 36 (Table 25).

#### Chinook Salmon

The 1986 North Peninsula chinook catch was 11,740 fish (Table 4). The harvest was 36% below the 1976-85 average of 18,295 and 50% less than the 1985 catch. The majority (41%) of the catch was in the Nelson Lagoon Section, while 29% was from the Harbor Point to Cape Seniavin fishery (Table 5). Catches peaked during weeks 25 and 26 in the Nelson Lagoon Section and week 26 in the Harbor Point to Cape Seniavin fishery (McCullough 1988a). The majority (65%) of the Nelson Lagoon Section catch was harvested with set gill nets, while the majority (85%) of the harvest in the Harbor Point to Cape Seniavin fishery was with drift gill nets. The chinook salmon harvested in the Northwestern District were ages 1.5 (32.2%), 1.4 (26.2%), 1.3 (20.7%), and 1.2 (20.9%) (Table 26). Overall, the male to female ratio was 0.6:1 (Table 27). Females were larger than males among all ages except age 1.5 (McCullough 1988a). The mean North Peninsula chinook length was 728 mm. The largest chinook were harvested in the Nelson Lagoon Section where the mean length was of 738 mm. The 1986 mean size of Nelson Lagoon Section chinook salmon was 89 mm shorter than in 1985 (McCullough 1987). In 1986 younger-aged fish, ages 1.2 and 1.3, supported 35.9% of the run as compared to 1985 where the same ages supported 10.0% of the run.

Chinook escapement to the North Peninsula was 23,319 fish (Table 18). The majority of the escapement (71%) was in the Nelson, Meshik, and Cinder Rivers at 38%, 19%, and 14%, respectively (McCullough 1988a).

#### Sockeye Salmon

The North Peninsula sockeye salmon harvest was 2,463,735 fish (Table 4). The harvest was 63% greater than the 1976-85 average of 1,509,409 and 5% less than the 1985 sockeye harvest. The majority (85%) of the harvest occurred in

the Port Moller to Strogonof Point fisheries. The Harbor Point to Cape Seniavin fishery produced 38% and the Cape Seniavin to Strogonof Point fishery produced 47% of the North Peninsula sockeye salmon harvest. The peak catch occurred during week 28 but a substantial catch also occurred in weeks 26 through 29. The North Peninsula sockeye catch was the second largest on record (1962-86) and was exceeded only by the 1985 catch (Shaul et al. 1987). Drift gill net gear harvested the majority of the fish in all major areas except in the Nelson Lagoon Section where set gill net gear caught 66% and in the Urilia Bay Section where purse seine gear caught 70% (Table 5). The majority of the sockeye salmon harvested were ages 2.3 (39.6%), 2.2 (26.9%), and 1.3 (24.0%) (Table 17). The male to female ratio for the North Peninsula catch was 0.7:1 (Table 16). The mean sockeye length in the harvest was 554 mm. The largest sockeye were in the Nelson Lagoon Section where the mean length was 562 mm. The smallest sockeye were in the Urilia Bay Section where the mean length was 540 mm.

The North Peninsula sockeye escapement was 712,213 fish (Table 18). Nelson and Bear Rivers supported 55% of the escapement. The moderate-sized systems of Meshik and Cinder Rivers, Ilnik Lagoon, and Whaleback Mountain Creek in Urilia Bay supported 36% of the escapement. Minor systems supported the remaining 9% of the escapement. The sockeye escapement to Nelson, Bear, and Sandy Rivers, and Ilnik Lagoon (Ilnik and Ocean Rivers and Willie Creek), was 123,348, 273,374, 10,488, and 66,125 fish, respectively (McCullough 1988a). These escapements were within or above the desired escapement goals except the Sandy River escapement which was 48% below the desired level (Shaul et al. 1987). Sockeye escapement to the North Peninsula was dominated by ages 1.3 (12.9%), 2.2 (36.2%), and 2.3 (36.1%) (Table 19).

In 1986 250,027 sockeye salmon were counted through the Bear River weir. Peak escapement occurred in week 28. An estimated 23,347 sockeye salmon escaped into the river after the weir was removed on August 29, bringing the total escapement to 273,374 (McCullough 1988a). Age 2.2 fish accounted for 58.2% of the escapement, followed by age 2.3 (32.3%) (Table 19). In Bear River an increase in the proportion of age-2.2 sockeye salmon accompanied by a decrease in age-1.3 and age-2.3 fish occurred as the season progressed. Male sockeye salmon were more abundant than female sockeye salmon in all major age classes, except among ages 1.3 and 2.3 (McCullough 1988a). Female sockeye salmon were more abundant than males before week 26 and after week 34. Overall, the male to female ratio was 1.3:1 (Table 20). Female sockeye salmon were larger than males among all ages, except ages 2.3 and 2.4. The average length was 527 mm for females and 498 mm for males. The average sockeye length in the Bear River escapement was 511 mm.

In 1986 the estimated sockeye escapement for the Nelson Lagoon system (Coastal and Hoodoo Lakes, and David, Caribou, and Sapsuk Rivers) was 123,348 fish (Figure 9). Approximately 95% of the escapement in the Nelson Lagoon system occurs in the Sapsuk River-Hoodoo Lake drainage (Shaul et al. 1986), of which about 75% spawn in Hoodoo Lake and the remainder (25%) spawn in Sapsuk River (Shaul et al. 1987).

In 1986 109,463 sockeye salmon were counted in the Sapsuk River-Hoodoo Lake drainage. An estimated 7,585 sockeye salmon escaped into the Sapsuk River-Hoodoo Lake area after the tower was closed on 29 July (McCullough 1988a). The total escapement for the Sapsuk River-Hoodoo Lake area was 117,048 fish.

Peak escapement occurred in week 28. Age 2.3 fish accounted for 71.7% of the Sapsuk River-Hoodoo Lake escapement, followed by ages 2.2 (15.7%) and 1.3 (7.9%) (Table 19). In the Sapsuk River-Hoodoo Lake escapement an increase in the proportion of age-1.3 sockeye salmon accompanied by a decrease in age-2.2 and age-2.3 fish occurred as the season progressed (McCullough 1988a). Female sockeye salmon were more abundant than males after week 29. Overall, the male to female ratio was 0.9:1 (Table 20). Female sockeye salmon were more abundant than male sockeye salmon among all major ages except age-1.3 fish. Female sockeye salmon lengths differed from male lengths, with the mean length of females aged-1.2 being 86 mm larger and those aged-2.2 being 46 mm larger. The average female length was 567 mm and for males was 581 mm. The average sockeye length in the Sapsuk River-Hoodoo Lake escapement was 574 mm.

Otoliths collected from sockeye salmon carcasses in the Sapsuk River indicated that the escapement was composed of age-1.2 (10%), -1.3 (80%), and -2.3 (10%) fish (McCullough 1988a). The Hoodoo Lake spawners were mostly age-2.2 and -2.3 fish; these age classes dominated the mixed Hoodoo Lake and Sapsuk River escapement samples at the Sapsuk River tower but did not dominate the Sapsuk River samples. Age information indicated that the majority of Hoodoo Lake spawners may have ascended the Sapsuk River before the river spawners (McCullough 1988a). The male to female ratio in the Sapsuk River was 1.2:1.

The sockeye escapement into Sandy River was 10,488 fish (McCullough 1988a). A total of 292 readable otoliths were collected from carcasses and spawned-out fish. Age 1.3 accounted for 63.7% of the total escapement, followed by age-1.2 (30.8%) (Table 19). Overall, the male to female ratio was 0.8:1 (Table 20). No length data was collected on Sandy River sockeye salmon.

The sockeye escapement into the Ilnik Lagoon System, (Ilnik River and Willie Creek) was 66,125 fish (McCullough 1988a). Age 0.3 accounted for 53.9% of the total escapement, followed by age-1.3 (37.3%) (Table 19). Overall, the male to female ratio was 0.8:1 (Table 20). Males were generally larger than females. The average male length was 572 mm, and the average female length was 544 mm (McCullough 1988a). The average sockeye length in the Ilnik Lagoon escapement was 556 mm.

## Pink Salmon

Pink salmon total returns to North Peninsula streams have historically been of minor importance with the harvest being incidental to fisheries directed toward other species, primarily sockeye salmon. In 1986, 22,630 pink salmon were caught in North Peninsula fisheries (Table 4). The majority (51%) of the catch was in the Harbor Point to Cape Seniavin fishery, followed by the Swanson Lagoon and Bechevin Bay Sections (44%) (McCullough 1988a). Peak catches occurred in the Swanson Lagoon and Bechevin Bay Sections during week 31 and in the Harbor Point to Cape Seniavin fishery during week 32. Although pink escapements have historically occurred in both North Peninsula districts, aerial counts indicated escapement only in the Northwestern District. The total escapement was about 9,800 pink salmon. The total North Peninsula run was 32,472 fish (70% catch and 30% escapement). Since 1962 the largest pink harvest occurred in 1978 with an estimated total run of 563,400 fish (Shaul et al. 1987). The 1976-85 average return has been 120,000 with

even-year runs averaging 230,500 and odd-year runs 10,600. Since the relatively large pink run in 1978 the catch and escapement have steadily declined.

### Chum Salmon

A total of 271,216 chum salmon were caught in North Peninsula fisheries in 1986 (Table 4). The catch was 32% lower than the 1976-85 average and 60% below the 1985 catch. The 1986 chum harvest was the lowest since 1979. Most of the catch was in the Harbor Point to Cape Seniavin fishery (35%) and the Izembek-Moffet Bay Section (25%) (McCullough 1988a). The peak catch occurred during week 29 in the Harbor Point to Cape Seniavin fishery and in week 28 in the Izembek-Moffet Bay Section. In the North Peninsula fisheries age-0.3 fish accounted for 73.4% of the harvest, followed by age-0.4 fish at 24.0% (Table 23). The Herendeen-Moller Bay and the Izembek-Moffet Bay Sections had substantially fewer age-0.3 fish with a corresponding increase in age-0.4 fish. Females were more abundant in the catch than males in every fishery except in the Izembek-Moffet Bay Section. Overall, the male to female ratio for the North Peninsula harvest was 0.6:1 (Table 21). The North Peninsula average chum salmon length in the harvest was 568 mm.

The 1986 North Peninsula chum escapement was 297,032 fish, a level 42% lower than the 1976-85 average and 36% lower than the 1985 escapement (Table 18). The majority of the escapement was in the Izembek-Moffet Bay Section (56%) and Herendeen-Moller Bay Section (20%) (McCullough 1988a). The chum salmon escapement was unevenly distributed. Below average escapements occurred in the Nelson Lagoon, portions of the Herendeen-Moller Bay, and Izembek-Moffet Bay Sections. Average or above average escapements occurred in most other systems (Shaul et al. 1987). The total chum run for the North Peninsula was about 568,248 fish.

### Coho Salmon

A total of 165,201 coho salmon were harvested in the North Peninsula (Table 4). The area catch was 38% greater than the 1976-85 average and 2% lower than the 1985 catch. The majority of the 1986 catch was in the Nelson Lagoon Section (60%) and the Swanson Lagoon-Bechevin Bay Section fishery (14%). Peak catches occurred in week 34 in the Nelson Lagoon Section and during week 30 in the Swanson Lagoon-Bechevin Bay Section fishery (McCullough 1988a). Age-2.1 fish accounted for 69.6% of total harvest, followed by age-3.1 fish (25.2%) (Table 28). Females were more abundant than males among all ages except in the Nelson Lagoon Section where males were more abundant. Overall, the male to female ratio for the North Peninsula harvest was 1.1:1 (Table 29). The largest coho salmon were harvested in the Cape Seniavin to Strogonof Point fishery (mean length 612 mm) and the smallest were harvested in the Nelson Lagoon Section and the Harbor Point to Cape Seniavin fishery (mean length 590 mm). The average coho length in the North Peninsula catch was 592 mm.

Coho escapements in the North Peninsula have been poorly monitored due to budget restrictions. The escapement in seven monitored streams was 163,920 fish (Table 18), which represents about a 39% decline from the 1985



escapement. The Cinder River and Port Heiden Section escapements were well below desired levels (Shaul et al. 1987).

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## TABLES AND FIGURES

Table 1. Alaska Peninsula-Aleutian Islands Management Area listing of allowable gear by district and section, 1986.<sup>a</sup>

District	Set Gill Net	Drift Gill Net	Purse Seine	Hand Purse Seine	Beach Seine
SOUTH PENINSULA					
Southeastern District	X		X	X	
Southcentral District	X		X	X	
Southwestern District	X		X	X	
Unimak District	X	X	X	X	
ALEUTIAN ISLANDS AREA					
			X	X	X
NORTH PENINSULA					
Northwestern District	X	X	X	X	
Northern District					
Black Hills Section	X	X			
Caribou Flats Section	X	X			
Nelson Lagoon Section	X	X			
Herendeen-Moller Bay Section	X	X	X	X	
Bear River Section		X	X	X	
Three Hills Section		X			
Port Heiden Section	X	X			
Cinder River Section	X	X			

<sup>a</sup>1986 Regulations of the Alaska Board of Fisheries for Commercial Fishing in Alaska lists specific gear type and time regulations.

Table 2. Alaska Peninsula-Aleutian Islands Management Area listing of fishing areas and their corresponding statistical areas, 1986.

District	Statistical Area			
SOUTH PENINSULA				
Southeastern District				
Southeast District Mainland	281-10 281-33 283-90	281-20 281-35	281-31 283-75	281-32 283-80
Shumagin Island Section	282-11 282-22 282-26	282-12 282-23	282-13 282-24	282-21 282-25
Southcentral District				
Canoe Bay	283-63	283-64		
Pavlof Bay	283-61	283-62	283-65	
Southwestern District				
Volcano Bay	283-51	283-52		
Belkofski Bay	283-42			
Cold Bay	283-32	283-33	283-34	283-35
Deer Island	283-31			
Thin Point	283-20			
Morzhovoi Bay	283-12			
Ikatan Peninsula to Cape Lutke	311-60 284-40	(June catch) 284-50		284-60
Unimak District				
Sanak Island	283-10			
Cape Lutke	284-20			
ALEUTIAN ISLANDS AREA				
Unalaska District	302-21	302-22	302-24	302-31
NORTH PENINSULA				
Northwestern District				
Urilia Bay	311-32			
Swanson Lagoon	311-52			
Bechevin Bay	311-60	(Post-June catch)		
Izembek-Moffet Bay Section	312-20	312-40		
Northern District				
Black Hills Section	313-10			
Nelson Lagoon Section	313-30			
Herendeen-Moller Bay	314-20			
Harbor Point to Cape Seniavin	314-12	315-11	315-20	
Cape Seniavin to Strogonof Point	316-10	316-20		
Port Heiden Section	317-10	317-20		
Cinder River Section	318-20			

Table 3. 1986 statistical weeks.

Statistical Week	Calendar Dates	Statistical Week	Calendar Dates
1	01-Jan to 04-Jan	28	06-Jul to 12-Jul
2	05-Jan to 11-Jan	29	13-Jul to 19-Jul
3	12-Jan to 18-Jan	30	20-Jul to 26-Jul
4	19-Jan to 25-Jan	31	27-Jul to 02-Aug
5	26-Jan to 01-Feb	32	03-Aug to 09-Aug
6	02-Feb to 08-Feb	33	10-Aug to 16-Aug
7	09-Feb to 15-Feb	34	17-Aug to 23-Aug
8	16-Feb to 22-Feb	35	24-Aug to 30-Aug
9	23-Feb to 01-Mar	36	31-Aug to 06-Sep
10	02-Mar to 08-Mar	37	07-Sep to 13-Sep
11	09-Mar to 15-Mar	38	14-Sep to 20-Sep
12	16-Mar to 22-Mar	39	21-Sep to 27-Sep
13	23-Mar to 29-Mar	40	28-Sep to 04-Oct
14	30-Mar to 05-Apr	41	05-Oct to 11-Oct
15	06-Apr to 12-Apr	42	12-Oct to 18-Oct
16	13-Apr to 19-Apr	43	19-Oct to 25-Oct
17	20-Apr to 26-Apr	44	26-Oct to 01-Nov
18	27-Apr to 03-May	45	02-Nov to 08-Nov
19	04-May to 10-May	46	09-Nov to 15-Nov
20	11-May to 17-May	47	16-Nov to 22-Nov
21	18-May to 24-May	48	23-Nov to 29-Nov
22	25-May to 31-May	49	30-Nov to 06-Dec
23	01-Jun to 07-Jun	50	07-Dec to 13-Dec
24	08-Jun to 14-Jun	51	14-Dec to 20-Dec
25	15-Jun to 21-Jun	52	21-Dec to 27-Dec
26	22-Jun to 28-Jun	53	28-Dec to 31-Dec
27	29-Jun to 05-Jul		

Table 4. The commercial salmon catch in the Alaska Peninsula-Aleutian Islands Management Area by species, 1966-86.

Year	Area	Chinook	Sockeye	Pink	Chum	Coho	Total
1966	South Peninsula	1,400	606,200	302,300	494,400	6,300	1,404,300
	Aleutians	5,600	245,300	16,000	82,800	37,300	349,700
	North Peninsula	0	1,000	63,500	700	0	65,200
	Total	7,000	852,500	381,800	577,900	43,600	1,819,200
1967	South Peninsula	1,600	294,100	77,800	245,200	2,900	621,600
	Aleutians	0	200	7,900	0	0	8,100
	North Peninsula	5,500	224,700	700	41,300	46,800	319,000
	Total	7,100	519,000	86,400	286,500	49,700	948,700
1968	South Peninsula	1,400	699,800	1,287,100	325,300	31,100	2,344,700
	Aleutians	0	2,000	902,800	800	100	905,700
	North Peninsula	4,500	237,100	200	73,500	64,900	380,200
	Total	5,900	938,900	2,190,100	399,600	96,100	3,630,600
1969	South Peninsula	1,900	912,800	1,219,400	389,200	10,900	2,534,200
	Aleutians	0	1,900	242,200	1,500	0	245,600
	North Peninsula	4,800	321,300	100	28,100	49,100	403,400
	Total	6,700	1,236,000	1,461,700	418,800	60,000	3,183,200
1970	South Peninsula	1,800	1,794,600	1,723,400	981,700	32,200	4,533,700
	Aleutians	0	200	672,500	3,300	100	676,100
	North Peninsula	3,200	213,000	7,800	50,200	26,400	300,600
	Total	5,000	2,007,800	2,403,700	1,035,200	58,700	5,510,400
1971	South Peninsula	2,200	715,500	1,450,100	1,366,600	16,800	3,551,200
	Aleutians	0	300	45,400	100	0	45,800
	North Peninsula	2,200	354,200	300	64,200	8,200	429,100
	Total	4,400	1,070,000	1,495,800	1,430,900	25,000	4,026,100
1972	South Peninsula	1,300	557,800	78,000	727,500	8,000	1,372,600
	Aleutians	0	100	2,800	0	0	2,900
	North Peninsula	1,800	179,500	0	84,700	9,600	275,600
	Total	3,100	737,400	80,800	812,200	17,600	1,651,100

-Continued-



Table 4. (p 2 of 4)

Year	Area	Chinook	Sockeye	Pink	Chum	Coho	Total
1973	South Peninsula	400	330,200	58,000	293,000	6,600	688,200
	Aleutians	0	100	7,000	0	0	7,100
	North Peninsula	4,400	171,800	300	155,700	26,900	359,100
	Total	4,800	502,100	65,300	448,700	33,500	1,054,400
1974	South Peninsula	500	204,700	99,700	71,500	9,400	385,800
	Aleutians	0	0	0	0	0	0
	North Peninsula	5,100	247,900	10,500	35,300	24,000	322,800
	Total	5,600	452,600	110,200	106,800	33,400	708,600
1975	South Peninsula	100	268,400	61,700	132,900	0	463,100
	Aleutians	0	0	0	0	0	0
	North Peninsula	2,100	233,500	300	8,700	28,200	272,800
	Total	2,200	501,900	62,000	141,600	28,200	735,900
1976	South Peninsula	2,100	375,000	2,367,000	532,500	200	3,276,800
	Aleutians	0	0	0	0	0	0
	North Peninsula	4,900	641,100	600	73,600	26,000	746,200
	Total	7,000	1,016,100	2,367,600	606,100	26,200	4,023,000
1977	South Peninsula	500	311,700	1,448,600	243,200	2,100	2,006,100
	Aleutians	0	0	0	0	0	0
	North Peninsula	5,500	471,100	900	129,100	34,100	640,700
	Total	6,000	782,800	1,449,500	372,300	36,200	2,646,800
1978	South Peninsula	800	579,500	5,608,800	547,000	60,700	6,796,800
	Aleutians	0	1,800	38,100	0	0	39,900
	North Peninsula	14,200	896,200	466,600	163,200	63,300	1,603,500
	Total	15,000	1,477,500	6,113,500	710,200	124,000	8,440,200
1979	South Peninsula	2,100	1,149,700	6,570,500	483,000	356,500	8,561,800
	Aleutians	0	12,200	539,400	200	0	551,800
	North Peninsula	17,100	1,979,500	5,000	65,700	112,800	2,180,100
	Total	19,200	3,141,400	7,114,900	548,900	469,300	11,293,700

-Continued-

Table 4. (p 3 of 4)

Year	Area	Chinook	Sockeye	Pink	Chum	Coho	Total
1980	South Peninsula	4,800	3,613,000	7,961,500	1,351,200	274,200	13,204,700
	Aleutians	0	9,200	2,597,500	4,900	0	2,611,600
	North Peninsula	16,800	1,397,100	301,700	700,200	127,900	2,543,700
	Total	21,600	5,019,300	10,860,700	2,056,300	402,100	18,360,000
1981	South Peninsula	10,200	2,255,200	5,035,900	1,770,300	162,200	9,233,800
	Aleutians	0	5,400	302,800	6,600	200	315,000
	North Peninsula	18,300	1,844,900	11,200	706,800	155,400	2,736,600
	Total	28,500	4,105,500	5,349,900	2,483,700	317,800	12,285,400
1982	South Peninsula	9,800	2,346,000	6,734,900	2,272,500	256,000	11,619,200
	Aleutians	0	2,700	1,447,800	6,100	0	1,456,600
	North Peninsula	30,100	1,435,300	12,300	331,100	238,000	2,046,800
	Total	39,900	3,784,000	8,195,000	2,609,700	494,000	15,122,600
1983	South Peninsula	26,900	2,556,600	2,827,600	1,707,100	127,700	7,245,900
	Aleutians	0	4,400	2,000	11,400	0	17,800
	North Peninsula	29,500	2,093,400	3,400	348,700	75,100	2,550,100
	Total	56,400	4,654,400	2,833,000	2,067,200	202,800	9,813,800
1984	South Peninsula	9,200	2,318,000	11,589,300	1,656,500	309,100	15,882,100
	Aleutians	0	67,200	2,309,700	33,900	0	2,410,800
	North Peninsula	23,000	1,734,900	27,400	796,700	198,600	2,780,600
	Total	32,200	4,120,100	13,926,400	2,487,100	507,700	21,073,500
1985	South Peninsula	7,884	2,214,583	4,438,598	1,393,285	172,514	8,226,864
	Aleutians	40	2,750	90	14,175	0	17,055
	North Peninsula	23,553	2,600,589	3,055	670,644	167,740	3,465,581
	Total	31,477	4,817,922	4,441,743	2,078,104	340,254	11,709,500
1986	South Peninsula	5,589	1,223,089	4,031,487	1,749,651	235,854	7,245,670
	Aleutians	11	7,702	42,621	38,819	60	89,213
	North Peninsula	11,740	2,463,735	22,630	271,216	165,201	2,934,522
	Total	17,340	3,694,526	4,096,738	2,059,686	401,115	10,269,405

-Continued-

Table 4. (p 4 of 4)

Year	Area	Chinook	Sockeye	Pink	Chum	Coho	Total
<hr/>							
Average							
1966-1975							
	South Peninsula	1,260	638,410	635,750	502,730	12,420	1,778,150
	Aleutians	0	580	194,410	640	20	195,630
	North Peninsula	3,370	220,360	3,550	58,320	27,460	285,600
<hr/>							
	Total	4,630	859,350	833,710	561,690	39,900	2,259,380
<hr/>							
Average							
1976-1985							
	South Peninsula	7,428	1,771,928	5,458,270	1,195,659	172,121	8,450,536
	Aleutians	4	10,565	723,739	7,728	20	742,036
	North Peninsula	18,295	1,509,409	83,216	398,574	119,894	2,026,268
<hr/>							
	Total	25,727	3,291,902	6,265,225	1,601,961	292,035	11,218,840
<hr/>							

Note: Values prior to 1985 are rounded to the nearest hundred fish.

Table 5. Commercial set gill net, drift gill net, and purse seine salmon harvest by area and species in the Alaska Peninsula-Aleutian Islands Management Area, 1986.

Area	Gear	-----Species-----					Total	Percent
		Chinook	Sockeye	Pink	Chum	Coho		
SOUTH PENINSULA								
Southeastern District								
Southeast Dist. Mainland	Seine	197	21,178	430,690	131,155	1,870	585,090	8.1
	Set Net	189	224,333	59,626	37,788	3,073	325,009	4.5
	Total	386	245,511	490,316	168,943	4,943	910,099	12.6
Shumagin Island Section	Seine	3,605	414,815	1,603,814	631,834	198,490	2,852,558	39.4
	Set Net	76	83,023	35,393	24,546	3,029	146,067	2.0
	Total	3,681	497,838	1,639,207	656,380	201,519	2,998,625	41.4
Southcentral District								
Canoe Bay	Seine	5	6,689	833,898	127,947	50	968,589	13.4
	Set Net	1	369	354	6,181	0	6,905	0.1
	Total	6	7,058	834,252	134,128	50	975,494	13.5
Pavlof Bay	Seine	27	41,267	244,158	120,551	1,113	407,116	5.6
	Set Net	0	941	0	156	1	1,098	0.0
	Total	27	42,208	244,158	120,707	1,114	408,214	5.6

-Continued-

Table 5. (page 2 of 7)

Area	Gear	-----Species-----					Total	Percent
		Chinook	Sockeye	Pink	Chum	Coho		
SOUTH PENINSULA								
Southwestern District								
Volcano Bay	Seine	3	8,595	279,721	133,171	240	421,730	5.8
	Set Net	1	85	0	41	0	127	0.0
	Total	4	8,680	279,721	133,212	240	421,857	5.8
Belkofski Bay	Seine	2	386	202,413	104,564	1	307,366	4.2
	Total	2	386	202,413	104,564	1	307,366	4.2
Cold Bay	Seine	0	2,180	53,062	61,995	0	117,237	1.6
	Set Net	0	5	0	5	4	14	0.0
	Total	0	2,185	53,062	62,000	4	117,251	1.6
Deer Island	Seine	0	16	47,943	412	0	48,371	0.7
	Total	0	16	47,943	412	0	48,371	0.7
Thin Point	Seine	0	16,606	0	0	710	17,316	0.2
	Total	0	16,606	0	0	710	17,316	0.2

-Continued-

Table 5. (page 3 of 7)

Area	Gear	-----Species-----					Total	Percent
		Chinook	Sockeye	Pink	Chum	Coho		
SOUTH PENINSULA								
Morzhovoi Bay	Seine	0	16,658	21,503	73,020	0	111,181	1.5
	Set Net	4	4,777	6,790	2,965	406	14,942	0.2
	Total	4	21,435	28,293	75,985	406	126,123	1.7
Unimak District								
Ikatan Peninsula To Cape Lazaref	Seine	314	52,753	66,372	35,790	986	156,215	2.2
	Set Net	50	24,134	7,295	8,992	6,934	47,405	0.7
	Drift Net	344	150,495	29,489	122,328	18,901	321,557	4.4
Total		708	227,382	103,156	167,110	26,821	525,177	7.3
Sanak Islands	Seine	0	0	0	0	45	45	0.0
	Set Net	1	2,294	466	221	1,377	4,359	0.1
	Total	1	2,294	466	221	1,422	4,404	0.1
Cape Lutke	Seine	618	111,068	108,159	84,945	1	304,791	4.2
	Drift Net	153	42,716	807	41,265	0	84,941	1.2
	Total	771	153,784	108,966	126,210	1	389,732	5.4

-Continued-

Table 5. (page 4 of 7)

Area	Gear	-----Species-----					Total	Percent
		Chinook	Sockeye	Pink	Chum	Coho		
ALEUTIAN ISLANDS AREA								
Umnak Pass	Seine	11	1,482	1,199	37,282	0	39,974	44.8
Kashega Bay	Seine	0	4,937	5,365	500	56	10,858	12.2
Makushin Bay	Seine	0	1,237	15,306	987	0	17,530	19.7
Unalaska Bay	Seine	0	46	20,751	50	4	20,851	23.4
	Total	11	7,702	42,621	38,819	60	89,213	100.0
NORTH PENINSULA								
Northwestern District								
Urilia Bay	Seine	1	88,756	0	522	3,280	92,559	3.5
	Set Net	1	7,439	0	0	0	7,440	0.3
	Drift Net	8	30,107	0	46	0	30,161	1.1
	Total	10	126,302	0	568	3,280	130,160	4.9
Swanson Lagoon	Seine	1	8,081	0	15,708	17,734	41,524	1.6
	Set Net	0	881	0	3,913	2,660	7,454	0.3
	Drift Net	0	555	0	0	2,655	3,210	0.1
	Total	1	9,517	0	19,621	23,049	52,188	2.0

-Continued-

Table 5. (page 5 of 7)

Area	Gear	-----Species-----					Total	Percent
		Chinook	Sockeye	Pink	Chum	Coho		
NORTH PENINSULA								
Bechevin Bay	Seine	3	1,035	9,530	21,727	0	32,295	1.2
	Set Net	3	528	334	1,751	0	2,616	0.1
	Drift Net	0	1,856	21	778	1	2,656	0.1
	Total	6	3,419	9,885	24,256	1	37,567	1.4
Izembek-Moffet Lagoon Section	Seine	6	19,051	0	69,118	0	88,175	3.3
	Total	6	19,051	0	69,118	0	88,175	3.3
Black Hills Section	Drift Net	173	2	0	0	0	175	0.0
	Total	173	2	0	0	0	175	0.0
Nelson Lagoon Section	Set Net	3,161	118,514	37	2,748	61,824	186,284	7.0
	Drift Net	1,688	59,887	35	858	37,462	99,930	3.8
	Total	4,849	178,401	72	3,606	99,286	286,214	10.7
Herendeen-Moller Bay	Seine	4	341	423	20,309	0	21,077	0.8
	Set Net	0	0	0	111	0	111	0.0
	Total	4	341	423	20,420	0	21,188	0.8

-Continued-



Table 5. (page 6 of 7)

Area	Gear	-----Species-----					Total	Percent
		Chinook	Sockeye	Pink	Chum	Coho		
NORTH PENINSULA								
Harbor Point To Cape Seniavin	Seine	89	40,694	5	10,493	0	51,281	1.9
	Set Net	403	1,484	66	8,531	59	10,543	0.4
	Drift Net	2,861	896,953	11,474	75,030	11,322	997,640	37.4
	Total	3,353	939,131	11,545	94,054	11,381	1,059,464	39.7
Cape Seniavin To Strogonof Point	Set Net	15	4,863	8	50	3,367	8,303	0.3
	Drift Net	1,501	1,143,977	682	38,628	3,999	1,188,787	44.6
	Total	1,516	1,148,840	690	38,678	7,366	1,197,090	44.9
Port Heiden Section	Set Net	680	36,679	0	808	2,082	40,249	1.5
	Drift Net	1,142	2,049	15	85	18,502	21,793	0.8
	Total	1,822	38,728	15	893	20,584	62,042	2.3
Cinder River Section	Drift Net	0	3	0	2	254	259	0.0
	Total	0	3	0	2	254	259	0.0
SOUTH PENINSULA TOTAL								
	Seine	4,771	692,211	3,891,733	1,505,384	203,506	6,297,605	86.9
	Set Net	321	337,667	109,458	80,674	13,447	541,567	7.5
	Drift Net	497	193,211	30,296	163,593	18,901	406,498	5.6
	Total	5,589	1,223,089	4,031,487	1,749,651	235,854	7,245,670	100.0

-Continued-

Table 5. (page 7 of 7)

Area	Gear	-----Species-----					Total	Percent
		Chinook	Sockeye	Pink	Chum	Coho		
ALEUTIAN ISLANDS AREA TOTAL								
	Seine	11	7,702	42,621	38,819	60	89,213	100.0
	Total	11	7,702	42,621	38,819	60	89,213	100.0
NORTH PENINSULA TOTAL								
	Seine	104	157,958	9,958	137,877	21,014	326,911	11.1
	Set Net	4,263	170,388	445	17,912	69,992	263,000	9.0
	Drift Net	7,373	2,135,389	12,227	115,427	74,195	2,344,611	79.9
	Total	11,740	2,463,735	22,630	271,216	165,201	2,934,522	100.0
ALASKA PENINSULA-ALEUTIAN ISLANDS AREA CATCH BY GEAR TYPE								
	Seine	4,886	857,871	3,944,312	1,682,080	224,580	6,713,729	65.4
	Set Net	4,584	508,055	109,903	98,586	83,439	804,567	7.8
	Drift Net	7,870	2,328,600	42,523	279,020	93,096	2,751,109	26.8
	Total	17,340	3,694,526	4,096,738	2,059,686	401,115	10,269,405	100.0
ALASKA PENINSULA-ALEUTIAN ISLANDS AREA CATCH BY REGION								
SOUTH PENINSULA		5,589	1,223,089	4,031,487	1,749,651	235,854	7,245,670	70.5
ALEUTIAN		11	7,702	42,621	38,819	60	89,213	0.9
NORTH PENINSULA		11,740	2,463,735	22,630	271,216	165,201	2,934,522	28.6
Total		17,340	3,694,526	4,096,738	2,059,686	401,115	10,269,405	100.0
Percent		0.2	35.9	39.9	20.1	3.9	100.0	

Table 6. Shumagin Island Section commercial salmon catch, June and post-June, 1976-1986.

Year	Species					Total
	Chinook	Sockeye	Pink	Chum	Coho	
June						
1976	305	72,016	5,643	73,475	0	151,439
1977	122	45,912	2,001	21,899	0	69,934
1978	319	83,352	54,325	33,425	57	171,478
1979	475	179,139	105,813	40,953	252	326,632
1980 <sup>a</sup>	342	572,090	465,652	71,330	34	1,109,448
1981	1,263	362,520	129,283	57,338	251	550,655
1982	1,554	450,548	686,671	161,308	0	1,300,081
1983	5,277	416,494	15,434	169,277	3	606,485
1984	1,830	256,838	449,188	109,207	14	817,077
1985	2,142	366,607	37,465	133,542	2,466	542,222
1986	560	156,027	141,315	99,048	1	396,951
-----						
1976-85 Average	1,363	280,552	195,148	87,175	308	564,545
Post-June						
1976 <sup>b</sup>	0	3	303,422	8,602	3	312,030
1977 <sup>b</sup>	6	97	0	38	74	215
1978	137	35,785	1,202,198	149,984	40,376	1,428,480
1979	910	145,369	2,076,670	93,527	313,573	2,630,049
1980	1,380	138,438	1,545,827	262,462	233,456	2,181,563
1981	4,009	116,297	1,364,026	307,980	126,955	1,919,267
1982	1,889	67,269	1,638,712	296,426	207,273	2,211,569
1983	6,547	108,365	900,726	220,824	92,403	1,328,865
1984	3,222	96,149	1,786,737	259,497	211,648	2,357,253
1985	461	107,792	1,632,827	205,899	113,193	2,060,172
1986	3,121	341,811	1,497,892	557,332	201,518	2,601,674
-----						
1976-85 Average	1,856	81,556	1,245,115	180,524	133,895	1,642,946
Combined June and Post-June						
1976	305	72,019	309,065	82,077	3	463,469
1977	128	46,009	2,001	21,937	74	70,149
1978	456	119,137	1,256,523	183,409	40,433	1,599,958
1979	1,385	324,508	2,182,483	134,480	313,825	2,956,681
1980	1,722	710,528	2,011,479	333,792	233,490	3,291,011
1981	5,272	478,817	1,493,309	365,318	127,206	2,469,922

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Table 6. (page 2 of 2)

Year	-----Species-----					Total
	Chinook	Sockeye	Pink	Chum	Coho	
1982	3,443	517,817	2,325,383	457,734	207,273	3,511,650
1983	11,824	524,859	916,160	390,101	92,406	1,935,350
1984	5,052	352,987	2,235,925	368,704	211,662	3,174,330
1985	2,603	474,399	1,670,292	339,441	115,659	2,602,394
1986	3,681	497,838	1,639,207	656,380	201,519	2,998,625
1976-85 Average	3,219	362,108	1,440,262	267,699	134,203	2,207,491

<sup>a</sup>1980 June catch includes catches through July 5.

<sup>b</sup>1976 and 1977 years had July fishing time severely curtailed to rebuild pink salmon returns on the Alaska Peninsula.

Table 7. North Peninsula Harbor Point to Strogonof Point commercial sockeye salmon harvest, 1981 to 1986.

Year	Catch Area				Total	
	Harbor Point to Cape Seniavin		Cape Seniavin to Strogonof Point			
	Number	Percent	Number	Percent	Number	Percent
1981	1,327,800	95.1	68,900	4.9	1,396,700	100.0
1982	1,009,300	87.6	142,500	12.4	1,151,800	100.0
1983	1,126,200	60.7	729,600	39.3	1,855,800	100.0
1984	637,400	46.2	743,700	53.8	1,381,100	100.0
1985	827,075	45.8	978,154	54.2	1,805,229	100.0
1986	939,131	45.0	1,148,840	55.0	2,087,971	100.0
Average	977,818	63.4	635,282	36.6	1,613,100	100.0

Table 8. Alaska Peninsula-Aleutian Islands Management Area subsistence salmon catch estimated from returned permits, 1986.

Area	Permits			Species-----					
	Issued	Returned	Percent Returned	Chinook	Sockeye	Pink	Chum	Coho	Total
<b>SOUTH PENINSULA</b>									
Sand Point	75	36	48.0	45	2,505	1,560	1,005	1,208	6,323
King Cove	24	21	87.5	2	1,834	14	120	919	2,889
Cold Bay	18	14	77.8	0	184	14	26	264	488
False Pass	12	9	75.0	13	158	188	299	215	873
Total	129	80	62.0	60	4,681	1,776	1,450	2,606	10,573
<b>NORTH PENINSULA</b>									
Nelson Lagoon	9	7	77.8	13	284	3	5	302	607
Port Heiden	4	4	100.0	28	282	0	0	0	310
Other	5	4	80.0	0	149	0	0	88	237
Total	18	15	83.3	41	715	3	5	390	1,154
<b>ALEUTIAN ISLANDS AREA</b>									
Unalaska	121	22	18.2	0	3,449	2,468	375	847	7,139
Total	121	22	18.2	0	3,449	2,468	375	847	7,139
Total	268	117	43.7	101	8,845	4,247	1,830	3,843	18,866

Table 9. South Unimak and Shumagin Island Section June sockeye and chum commercial salmon catch, by day, 1986.

Date	Shumagin Islands		South Unimak		Total	
	Sockeye	Chum	Sockeye	Chum	Sockeye	Chum
June 11	6,320	3,909	8,303	13,774	14,623	17,683
12						
13						
14	28,411	23,017	55,085	54,759	83,496	77,776
15						
16	24,987	14,227	30,554	35,268	55,541	49,495
17						
18	14,005	12,111	92,763	97,095	106,768	109,206
19						
20						
21	22,564	10,903	65,591	32,001	88,155	42,904
22						
23	22,995	13,098	20,518	6,607	43,513	19,705
24	13,279	8,452	17,344	5,120	30,623	13,572
25	23,466	13,331	25,212	8,097	48,678	21,428
Total	156,027	99,048	315,370	252,721	471,397	351,769

Table 10. South Peninsula commercial salmon catch by major region, 1986.

Area	Chinook	Sockeye	Pink	Chum	Coho	Total	Percent
<hr/>							
South Unimak and Shumagins <sup>a</sup>							
Total	1,895	471,397	291,989	351,769	2	1,117,052	15.4
<hr/>							
Southeast District Mainland							
Total	386	245,511	490,316	168,943	4,943	910,099	12.6
<hr/>							
Other <sup>b</sup>							
Total	3,308	506,181	3,249,182	1,228,939	230,909	5,218,519	72.0
<hr/>							
Total	5,589	1,223,089	4,031,487	1,749,651	235,854	7,245,670	100.0
<hr/>							

<sup>a</sup>Catch statistics for June fisheries only.

<sup>b</sup>Catch statistics do not include the Southeast District Mainland nor the June South Unimak and Shumagin Island Section fisheries.



Table 11. Southeast District Mainland commercial salmon catch by statistical week and species, 1986.

Statistical Week	Species					Total
	Chinook	Sockeye	Pink	Chum	Coho	
25	108	64,167	75	3,271	0	67,621
26	0	0	0	0	0	0
27	1	5,659	63	736	0	6,459
28	42	69,193	1,258	8,064	69	78,626
29	33	41,817	5,841	11,404	257	59,352
30	35	25,696	33,534	27,528	444	87,237
Pre-26 July	219	206,532	40,771	51,003	770	299,295
31	160	25,542	172,187	87,671	1,000	286,560
32	7	11,529	271,443	28,467	1,351	312,797
33	0	0	5,760	705	0	6,465
36	0	1,039	152	835	932	2,958
37	0	869	3	262	890	2,024
Post-26 July	167	38,979	449,545	117,940	4,173	610,804
Total	386	245,511	490,316	168,943	4,943	910,099

Table 12. South Peninsula commercial salmon catch by statistical week, gear type, and species, 1986.

Statistical Week	Species					Total	Percent
	Chinook	Sockeye	Pink	Chum	Coho		
Purse Seine							
24	341	45,562	51,924	39,456	0	137,283	2.2
25	804	146,437	170,116	122,346	0	439,703	7.0
26	231	87,961	66,924	42,944	1	198,061	3.2
27	176	30,097	15,321	37,171	1,700	84,465	1.3
28	512	81,632	28,888	82,075	7,248	200,355	3.2
29	1,848	114,523	107,045	162,342	70,118	455,876	7.2
30	490	80,025	287,423	173,663	49,832	591,433	9.4
31	259	51,101	1,113,208	341,916	42,087	1,548,571	24.6
32	91	36,577	1,625,452	367,694	25,758	2,055,572	32.6
33	19	17,893	425,119	135,113	4,354	582,498	0.0
35	0	0	0	0	0	0	0.0
36	0	389	313	657	1,632	2,991	0.1
37	0	14	0	7	631	652	0.0
38	0	0	0	0	145	145	0.0
Total	4,771	692,211	3,891,733	1,505,384	203,506	6,297,605	100.0
Set Gill Net							
24	7	4,654	51	714	0	5,426	1.0
25	131	75,645	215	5,409	1	81,401	15.0
26	16	12,355	310	3,151	0	15,832	2.9
27	9	14,825	191	3,437	19	18,481	3.4
28	66	94,325	1,677	15,469	310	111,847	20.7
29	47	65,525	5,381	11,851	2,909	85,713	15.8
30	21	25,949	10,233	7,092	1,529	44,824	8.3
31	15	23,584	39,888	14,926	2,870	81,283	15.0
32	6	12,505	40,301	11,611	1,052	65,475	12.1
33	0	5,014	10,936	5,034	904	21,888	4.0
34	0	0	0	0	0	0	0.0
35	0	150	70	150	25	395	0.1
36	3	1,635	202	1,337	1,840	5,017	0.9
37	0	1,290	3	431	1,822	3,546	0.7
38	0	211	0	62	166	439	0.1
Total	321	337,667	109,458	80,674	13,447	541,567	100.0

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Table 12. (page 2 of 2)

Statistical	Species						Percent
Week	Chinook	Sockeye	Pink	Chum	Coho	Total	
Drift Gill Net							
25	232	92,549	1,591	77,400	0	171,772	42.3
26	29	22,498	233	8,610	0	31,370	7.7
27	0	1,184	0	128	0	1,312	0.3
28	3	2,486	7	520	6	3,022	0.7
29	0	3,784	0	919	880	5,583	1.4
30	11	6,744	4,540	3,767	4,688	19,750	4.9
31	6	10,157	14,525	10,520	11,370	46,578	11.5
32	4	4,945	7,019	5,334	1,545	18,847	4.6
33	0	956	1,681	1,040	330	4,007	1.0
34	0	0	0	0	0	0	0.0
35	0	0	0	0	0	0	0.0
36	0	5	0	66	82	153	0.0
Total	497	193,211	30,296	163,593	18,901	406,498	100.0
All Gear							
24	560	98,119	52,675	95,459	0	246,813	3.4
25	1,167	314,631	171,922	205,155	1	692,876	9.7
26	276	122,814	67,467	54,705	1	245,263	3.4
27	185	46,106	15,512	40,736	1,719	104,258	1.4
28	581	178,443	30,572	98,064	7,564	315,224	4.4
29	1,895	183,832	112,426	175,112	73,907	547,172	7.6
30	522	112,718	302,196	184,522	56,049	656,007	9.1
31	280	84,842	1,167,621	367,362	56,327	1,676,432	23.1
32	101	54,027	1,672,772	384,639	28,355	2,139,894	29.5
33	19	23,863	437,736	141,187	5,588	608,393	8.4
34	0	0	0	0	0	0	0.0
35	0	150	70	150	25	395	0.0
36	3	2,029	515	2,060	3,554	8,161	0.1
37	0	1,304	3	438	2,453	4,198	0.1
38	0	211	0	62	311	584	0.0
Total	5,589	1,223,089	4,031,487	1,749,651	235,854	7,245,670	100.0
Percent	0.1	16.9	55.6	24.2	3.3	100.0	

Table 13. Shumagin Island Section commercial salmon catch by statistical week and species, 1986.

Statistical Week	-----Species-----					Total
	Chinook	Sockeye	Pink	Chum	Coho	
24	118	34,731	21,531	26,908	0	83,288
25	280	61,556	63,022	37,259	1	162,118
26	162	59,740	56,762	34,881	0	151,545
Total June	560	156,027	141,315	99,048	1	396,951
27	165	27,427	11,509	31,031	1,659	71,791
28	488	79,514	26,769	66,206	7,356	180,333
29	1,805	94,832	84,886	106,443	69,488	357,454
30	472	57,261	202,080	111,903	49,591	421,307
31	90	39,380	451,659	104,269	41,852	637,250
32	81	34,083	592,194	112,502	25,053	763,913
33	19	7,867	128,432	23,995	4,622	164,935
36	1	825	363	867	1,452	3,508
37	0	414	0	112	312	838
38	0	208	0	4	133	345
Total Post-June	3,121	341,811	1,497,892	557,332	201,518	2,601,674
Total All Weeks	3,681	497,838	1,639,207	656,380	201,519	2,998,625

Table 14. Ikatan Peninsula to Cape Lazaref commercial salmon catch by statistical week and species, 1986.

Statistical Week	Species					Total
	Chinook	Sockeye	Pink	Chum	Coho	
24	270	50,341	16,053	47,044	0	113,708
25	271	84,753	23,539	69,608	0	180,916
26	52	26,492	2,116	9,859	0	38,519
Total June	593	161,586	41,708	126,511	0	333,143
27	18	12,804	3,785	3,688	56	20,351
28	46	9,588	1,687	4,235	126	15,682
29	22	13,256	1,328	3,690	4,012	22,308
30	13	11,039	5,763	4,662	5,591	24,619
31	10	11,723	21,038	14,110	14,121	60,706
32	6	5,908	20,870	7,242	1,861	35,887
33	0	1,450	6,977	2,565	719	11,711
36	0	20	0	286	233	539
37	0	5	0	63	69	137
38	0	3	0	58	33	94
Total Post-June	115	65,796	61,448	40,599	26,821	192,034
Total All Weeks	708	227,382	103,156	167,110	26,821	525,177

Table 15. Cape Lutke commercial salmon catch by statistical week and species, 1986.

Statistical Week	Species-----					Total
	Chinook	Sockeye	Pink	Chum	Coho	
24	172	13,047	15,091	21,489	0	49,799
25	483	104,155	85,286	94,756	0	84,680
26	116	36,582	8,589	9,965	1	55,253
Total	771	153,784	108,966	126,210	1	389,732

Table 16. Mean length and sex ratio of the sockeye catch from the Alaska Peninsula, 1986.

Area	Length mm			Sex			
	Number	Mean	SE	Number	Male	Female	M:F Ratio
SOUTH PENINSULA							
Southeast District Mainland	1,284	579	1	1,410	813	597	1.4 : 1
Shumagin Island Section	1,423	553	1	1,580	753	827	0.9 : 1
Canoe Bay	247	574	2	279	174	105	1.7 : 1
Ikatan Peninsula to Cape Aksit	533	561	2	599	368	231	1.6 : 1
Ikatan Peninsula to Cape Lazaref	904	545	1	1,005	441	564	0.8 : 1
Cape Lutke Section	497	537	2	560	245	315	0.8 : 1
Total	4,888	559 <sup>a</sup>		5,433	2,794	2,639	1.1 : 1
NORTH PENINSULA							
Urilia Bay	1,389	540	1	1,598	830	768	1.1 : 1
Nelson Lagoon Section	4,331	562	1	4,911	1,951	2,960	0.7 : 1
Harbor Point to Cape Seniavin	5,141	547	1	5,595	2,368	3,227	0.7 : 1
Cape Seniavin to Strogonof Point	5,037	557	1	5,432	2,322	3,110	0.7 : 1
Total	15,898	554 <sup>a</sup>		17,536	7,471	10,065	0.7 : 1
Total	20,786	555 <sup>a</sup>		22,969	10,265	12,704	0.8 : 1

<sup>a</sup>Weighted mean.

Table 17. Age composition of the sockeye catch from the Alaska Peninsula, 1986.

Area	Age Group									Total
	0.2	0.3	1.2	1.3	2.2	1.4	2.3	2.4	Other <sup>a</sup>	
SOUTH PENINSULA										
Southeast District Mainland										
Number	139	2,519	3,702	161,940	12,776	1,235	63,199	0	0	245,510
Percent	0.1	1.0	1.5	66.0	5.2	0.5	25.7	0.0	0.0	100.0
Shumagin Island Section										
Number	832	12,801	15,704	215,071	98,527	326	154,415	0	163	497,839
Percent	0.2	2.6	3.2	43.2	19.8	0.1	31.0	0.0	0.0	100.0
Canoe Bay										
Number	0	743	286	5,372	343	29	200	0	87	7,060
Percent	0.0	10.5	4.1	76.1	4.9	0.4	2.8	0.0	1.2	100.0
Ikatan Peninsula-Cape Lazaref										
Number	0	3,033	3,010	43,134	45,933	328	65,553	0	595	161,586
Percent	0.0	1.9	1.9	26.7	28.4	0.2	40.6	0.0	0.4	100.0
Ikatan Peninsula-Cape Aksit										
Number	0	2,839	1,111	18,393	20,492	0	22,590	0	370	65,795
Percent	0.0	4.3	1.7	28.0	31.1	0.0	34.3	0.0	0.6	100.0
Cape Lutke										
Number	316	2,084	12,432	36,126	55,780	0	47,047	0	0	153,785
Percent	0.2	1.4	8.1	23.5	36.3	0.0	30.6	0.0	0.0	100.0
SOUTH PENINSULA TOTAL										
Number	1,287	24,019	36,245	480,036	233,851	1,918	353,004	0	1,215	1,131,575
Percent	0.1	2.1	3.2	42.4	20.7	0.2	31.2	0.0	0.1	100.0

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Table 17. (page 2 of 2)

Area	Age Group									Total
	0.2	0.3	1.2	1.3	2.2	1.4	2.3	2.4	Other	
NORTH PENINSULA										
Urilia Bay										
Number	1,378	56,626	4,498	134	61,192	107	733	1,633	134	126,301
Percent	1.1	44.8	3.6	0.1	48.4	0.1	0.6	1.3	0.1	100.0
Nelson Lagoon Section										
Number	589	6,416	6,628	34,901	21,287	130	107,452	531	470	178,404
Percent	0.3	3.6	3.7	19.6	11.9	0.1	60.2	0.3	0.3	100.0
Harbor Point-Cape Seniavin										
Number	654	29,791	14,492	131,438	348,555	1,666	409,512	2,487	535	939,130
Percent	0.1	3.2	1.5	14.0	37.1	0.2	43.6	0.3	0.1	100.0
Cape Seniavin-Strogonof Point										
Number	415	81,125	15,566	346,740	274,269	1,552	427,722	187	1,266	1,148,842
Percent	0.0	7.1	1.4	30.2	23.9	0.1	37.2	0.0	0.1	100.0
NORTH PENINSULA TOTAL										
Number	3,036	173,958	41,184	574,271	644,218	4,081	946,319	3,205	2,405	2,392,677
Percent	0.1	7.3	1.7	24.0	26.9	0.2	39.6	0.1	0.1	100.0
ALASKA PENINSULA TOTAL										
Number	4,323	197,977	77,429	1,054,307	878,069	5,999	1,299,323	3,205	3,620	3,524,252
Percent	0.1	5.6	2.2	29.9	24.9	0.2	36.9	0.1	0.1	100.0

<sup>a</sup> Other age groups include: 1.1, 2.1, 0.4, 3.1, 3.2, and 3.2.

Table 18. Alaska Peninsula-Aleutian Islands Area salmon escapement by district, 1986.<sup>a</sup>

Area	Chinook	Sockeye	Pink	Chum	Coho	Total
SOUTH PENINSULA						
Southeastern District	0	29,469	639,915	130,816	0	800,200
Southcentral District	0	8,475	846,182	105,774	0	960,431
Southwestern District	0	47,540	573,457	331,477	3,840	956,314
Unimak District	0	9,840	13,267	400	12	23,519
-----						
South Peninsula Total Estimated Escapement	0	95,324	2,072,821	568,467	3,852	2,740,464
ALEUTIAN ISLANDS AREA						
Unalaska District	0	13,200	136,846	23	0	150,069
-----						
Aleutian Islands Area Total Estimated Escapement	0	13,200	136,846	23	0	150,069
NORTH PENINSULA						
Northwestern District	0	84,375	9,842	203,033	5,280	302,530
Northern District	23,319	627,838	0	93,999	158,640	903,796
-----						
North Peninsula Total Estimated Escapement	23,319	712,213	9,842	297,032	163,920	1,206,326
-----						
Total	23,319	820,737	2,219,509	865,522	167,772	4,096,859

<sup>a</sup>Estimated escapements do not include streams which were not surveyed.

Table 19. Age composition of the sockeye escapement from the Alaska Peninsula, 1986.

Area	Age Group									Total
	0.2	0.3	1.2	2.1	1.3	2.2	1.4	2.3	2.4	
SOUTH PENINSULA										
Acheredin Lake										
Number	0	0	1,730	0	10,955	0	0	865	0	13,550
Percent	0.0	0.0	12.8	0.0	80.8	0.0	0.0	6.4	0.0	100.0
SOUTH PENINSULA TOTAL										
Number	0	0	1,730	0	10,955	0	0	865	0	13,550
Percent	0.0	0.0	12.8	0.0	80.8	0.0	0.0	6.4	0.0	100.0
NORTH PENINSULA										
Nelson River										
Number	0	662	1,835	2,755	9,235	18,369	0	83,939	252	117,047
Percent	0.0	0.6	1.6	2.4	7.9	15.7	0.0	71.7	0.2	100.0
Bear River										
Number	0	99	9,529	3,252	12,638	159,100	0	88,301	458	273,377
Percent	0.0	0.0	3.5	1.2	4.6	58.2	0.0	32.3	0.2	100.0
Sandy Lake										
Number	0	0	4,253	0	8,790	189	0	567	0	13,799
Percent	0.0	0.0	30.8	0.0	63.7	1.4	0.0	4.1	0.0	100.0
Ilnik Lagoon										
Number	799	47,637	1,119	0	32,930	799	160	4,956	0	88,400
Percent	0.9	53.9	1.3	0.0	37.3	0.9	0.2	5.6	0.0	100.0

-Continued-

Table 19. (page 2 of 2)

Area	-----Age Group-----									Total
	0.2	0.3	1.2	2.1	1.3	2.2	1.4	2.3	2.4	
NORTH PENINSULA TOTAL										
Number	799	48,398	16,736	6,007	63,593	178,457	160	177,763	710	492,623
Percent	0.2	9.8	3.4	1.2	12.9	36.2	0.0	36.1	0.1	100.0
ALASKA PENINSULA TOTAL										
Number	799	48,398	18,466	6,007	74,548	178,457	160	178,628	710	506,173
Percent	0.2	9.6	3.6	1.2	14.7	35.3	0.0	35.3	0.1	100.0

Table 20. Mean length and sex ratio of the sockeye escapement from the Alaska Peninsula, 1986.

Area	Length mm			Sex			
	Number	Mean	SE	Number	Male	Female	M:F Ratio
SOUTH PENINSULA							
Archeredin Lake	47	545	5	49	25	24	1.0 : 1
Total	47	545	5	49	25	24	1.0 : 1
NORTH PENINSULA							
Nelson River	416	574	2	474	229	245	0.9 : 1
Bear Lake	1,844	511	1	1,989	1,107	882	1.3 : 1
Sandy River				292	131	161	0.8 : 1
Ilnik Lagoon	552	556	1	722	330	392	0.8 : 1
Total	2,812	529 <sup>a</sup>		3,477	1,797	1,680	1.1 : 1
Total	2,859	529 <sup>a</sup>		3,526	1,822	1,704	1.1 : 1

<sup>a</sup>Weighted mean.

Table 21. Mean length and sex ratio of the chum catch from the Alaska Peninsula, 1986.

Area	Length mm			Sex			
	Number	Mean	SE	Number	Male	Female	M:F Ratio
SOUTH PENINSULA							
Southeast District Mainland	488	590	1	519	301	218	1.4 : 1
Shumagin Island Section	2,090	585	1	2,221	1,317	904	1.5 : 1
Canoe Bay	575	601	1	604	391	213	1.8 : 1
Ikatan Peninsula to Morzhovoi Bay	256	604	2	277	114	163	0.7 : 1
Ikatan Peninsula to Cape Lazaref	1,125	577	1	1,197	430	767	0.6 : 1
Ikatan Peninsula to Cape Lutke	171	580	3	186	98	88	1.1 : 1
Cape Lutke Section	734	575	1	766	337	429	0.8 : 1
Total	5,439	585 <sup>a</sup>		5,770	2,988	2,782	1.1 : 1
NORTH PENINSULA							
Saint Catherine to Swanson Lagoon	440	581	2	465	192	273	0.7 : 1
Izembek-Moffet Bay Section	346	586	2	365	194	171	1.1 : 1
Nelson Lagoon Section	260	583	2	272	72	200	0.4 : 1
Herendeen Bay	564	594	1	598	276	322	0.9 : 1
Harbor Point to Cape Seniavin	4,072	561	1	4,309	1,588	2,721	0.6 : 1
Cape Seniavin to Strogonof Point	2,215	571	1	2,378	980	1,398	0.7 : 1
Total	7,897	568 <sup>a</sup>		8,387	3,302	5,085	0.6 : 1
Total	13,336	576 <sup>a</sup>		14,157	6,290	7,867	0.8 : 1

<sup>a</sup>Weighted mean.

Table 22. Alaska Peninsula chum salmon commercial catch age composition by major fishing areas and time periods, 1986.

Catch Area	-----Age Group-----					Total
	0.2	0.3	0.4	0.5		
<hr/>						
Southeast District Mainland						
Number	692	142,632	22,849	2,770		168,943
Percent	0.4	84.4	13.5	1.6		100.0
<hr/>						
South Peninsula, June						
<u>Shumagin Island Section</u>						
Number	141	67,386	31,127	393		99,048
Percent	0.1	68.0	31.4	0.4		100.0
<u>South Unimak</u>						
Number	598	154,150	95,541	2,728		253,017
Percent	0.2	60.9	37.8	1.1		100.0
<hr/>						
Total Number	739	221,536	126,668	3,121		352,065
Total Percent	0.2	62.9	36.0	0.9		100.0
<hr/>						
South Peninsula, July-October <sup>a</sup>						
Number	6,379	655,581	134,782	11,006		807,748
Percent	0.8	81.2	16.7	1.4		100.0
<hr/>						
North Peninsula						
Number	3,287	198,067	64,719	3,678		269,751
Percent	1.2	73.4	24.0	1.4		100.0

<sup>a</sup>Does not include Southeast District Mainland catches.

Table 23. Age composition of the chum catch from the Alaska Peninsula, 1986.

Area	AGE GROUP				Total
	0.2	0.3	0.4	0.5	
SOUTH PENINSULA					
Southeast District Mainland					
Number	692	142,632	22,849	2,770	168,943
Percent	0.4	84.4	13.5	1.6	100.0
Shumagin Island Section					
Number	4,025	529,564	114,630	8,161	656,380
Percent	0.6	80.7	17.5	1.2	100.0
Canoe Bay					
Number	233	96,572	34,990	2,333	134,128
Percent	0.2	72.0	26.1	1.7	100.0
Ikatan Peninsula-Morzhovoi Bay					
Number	2,262	96,831	16,289	905	116,287
Percent	1.9	83.3	14.0	0.8	100.0
Ikatan Peninsula-Cape Lazaref					
Number	0	70,134	45,900	914	116,948
Percent	0.0	60.0	39.2	0.8	100.0
Cape Lutke					
Number	482	71,264	42,685	1,814	116,245
Percent	0.4	61.3	36.7	1.6	100.0
Cape Pankof-Cape Lutke					
Number	116	12,752	6,956	0	19,824
Percent	0.6	64.3	35.1	0.0	100.0
-----					
SOUTH PENINSULA TOTAL					
Number	7,810	1,019,749	284,299	16,897	1,328,755
Percent	0.6	76.7	21.4	1.3	100.0
NORTH PENINSULA					
Saint Catherine-Swanson Lagoon					
Number	199	30,644	12,835	199	43,877
Percent	0.5	69.8	29.3	0.5	100.0
Izembek-Moffet Bay Section					
Number	200	41,151	26,968	799	69,118
Percent	0.3	59.5	39.0	1.2	100.0

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Table 23. (page 2 of 2)

Area	-----AGE GROUP-----				Total
	0.2	0.3	0.4	0.5	
Nelson Lagoon Section					
Number	317	2,849	330	110	3,606
Percent	8.8	79.0	9.2	3.1	100.0
Herendeen-Moller Bay Section					
Number	181	10,862	7,965	1,412	20,420
Percent	0.9	53.2	39.0	6.9	100.0
Harbor Point-Cape Seniavin					
Number	1,643	82,751	9,086	574	94,054
Percent	1.7	88.0	9.7	0.6	100.0
Cape Seniavin-Strogonof Point					
Number	747	29,810	7,535	584	38,676
Percent	1.9	77.1	19.5	1.5	100.0
NORTH PENINSULA TOTAL					
Number	3,287	198,067	64,719	3,678	269,751
Percent	1.2	73.4	24.0	1.4	100.0
Total					
Number	11,097	1,217,816	349,018	20,575	1,598,506
Percent	0.7	76.2	21.8	1.3	100.0

Table 24. Aleutian Islands Area commercial salmon catch by statistical week, 1986.

Statistical Week	Species					Total	Percent
	Chinook	Sockeye	Pink	Chum	Coho		
26	3	180	448	4,985	0	5,616	6.3
27	8	1,302	751	32,297	0	34,358	38.5
28	0	0	0	0	0	0	0.0
29	0	1,700	40	100	0	1,840	2.1
30	0	1,250	375	400	0	2,025	2.3
31	0	1,241	11,705	494	0	13,440	15.1
32	0	1,299	29,302	543	30	31,174	34.9
33	0	730	0	0	30	760	0.9
Total	11	7,702	42,621	38,819	60	89,213	100.0
Percent	0.0	8.6	47.8	43.5	0.1	100.0	

Table 25. North Peninsula commercial salmon catch by statistical week, gear type, and species, 1986.

Statistical Week	Species					Total	Percent
	Chinook	Sockeye	Pink	Chum	Coho		
Purse Seine							
23	0	3,825	0	0	0	3,825	1.2
24	0	13,839	0	0	0	13,839	4.2
25	0	44,895	0	589	0	45,484	13.9
26	4	28,579	0	2,189	0	30,772	9.4
27	61	13,115	36	35,979	0	49,191	15.1
28	33	39,980	27	43,927	0	83,967	25.7
29	4	3,876	0	29,219	1,150	34,249	10.9
30	0	982	1,740	6,819	0	9,541	2.9
31	0	4,043	4,060	7,765	0	15,868	4.9
32	0	1,005	2,695	10,080	0	13,780	4.2
33	0	112	1,400	1,310	0	2,822	0.9
34	0	0	0	0	0	0	0.0
35	0	0	0	0	0	0	0.0
36	1	3,475	0	0	9,850	13,326	4.1
37	1	160	0	0	4,564	4,725	1.5
38	0	72	0	0	5,450	5,522	1.7
Total	104	157,958	9,958	137,877	21,014	326,911	100.0
Set Gill Net							
22	5	1	0	0	0	6	0.0
23	346	5,763	0	4	0	6,113	2.3
24	700	6,610	0	151	0	7,461	2.8
25	1,549	30,791	0	1,357	0	33,697	12.8
26	1,035	28,853	0	4,926	0	34,814	13.2
27	400	26,776	2	3,780	0	30,958	11.8
28	120	29,275	0	2,810	0	32,205	12.3
29	59	23,504	3	949	0	24,515	9.3
30	21	9,313	0	467	8	9,809	3.7
31	4	3,218	94	1,820	388	5,524	2.1
32	6	3,098	224	947	1,362	5,637	2.1
33	4	1,198	100	642	4,436	6,380	2.4
34	12	1,748	19	25	21,331	23,135	8.8
35	2	62	1	2	19,389	19,456	7.4
36	0	148	2	4	20,806	20,960	8.0
37	0	19	0	28	1,322	1,369	0.5
38	0	11	0	0	950	961	0.4
Total	4,263	170,388	445	17,912	69,992	263,000	100.0

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Table 25. (page 2 of 2)

Statistical	Species						
Week	Chinook	Sockeye	Pink	Chum	Coho	Total	Percent
Drift Gill Net							
23	182	482	0	59	0	723	0.0
24	661	5,543	0	12	0	6,216	0.3
25	1,455	33,925	0	300	0	35,680	1.5
26	2,299	298,088	1	16,410	1	316,799	13.5
27	1,275	343,504	13	12,807	5	357,604	15.3
28	846	691,093	2	20,135	7	712,083	30.4
29	328	352,847	28	28,550	9	381,762	16.3
30	145	123,866	1,274	20,320	328	145,933	6.2
31	94	46,783	1,569	6,975	372	55,793	2.4
32	55	58,510	5,058	6,056	950	70,629	3.0
33	21	58,848	2,161	2,254	5,355	68,639	2.9
34	7	66,638	1,351	1,110	23,992	93,098	4.0
35	4	40,797	596	313	11,609	53,319	2.3
36	1	13,317	169	119	25,410	39,016	1.7
37	0	1,148	5	7	5,312	6,472	0.3
38	0	0	0	0	845	845	0.0
Total	7,373	2,135,389	12,227	115,427	74,195	2,344,611	100.0
All Gear							
22	5	1	0	0	0	6	0.0
23	528	10,070	0	63	0	10,661	0.4
24	1,361	25,992	0	163	0	27,516	0.9
25	3,004	109,611	0	2,246	0	114,861	3.9
26	3,338	355,520	1	23,525	1	382,385	13.0
27	1,736	383,395	51	52,566	5	437,753	14.9
28	999	760,348	29	66,872	7	828,255	28.2
29	391	380,227	31	58,718	1,159	440,526	15.0
30	166	134,161	3,014	27,606	336	165,283	5.6
31	98	54,044	5,723	16,560	760	77,185	2.6
32	61	62,613	7,977	17,083	2,312	90,046	3.1
33	25	60,158	3,661	4,206	9,791	77,841	2.7
34	19	68,386	1,370	1,135	45,323	116,233	4.0
35	6	40,859	597	315	30,998	72,775	2.5
36	2	16,940	171	123	56,066	73,302	2.5
37	1	1,327	5	35	11,198	12,566	0.4
38	0	83	0	0	7,245	7,328	0.3
Total	11,740	2,463,735	22,630	271,216	165,201	2,934,522	100.0
Percent	0.4	84.0	0.8	9.2	5.6	100.0	

Table 26. Age composition of the chinook catch from the North Peninsula, 1986.

Area	-----AGE GROUP-----					Total
	1.1	1.2	1.3	1.4	1.5	
Nelson Lagoon Section						
Number	9	973	764	1,313	1,789	4,848
Percent	0.2	20.1	15.8	27.1	36.9	100
Harbor Point-Cape Seniavin						
Number	0	738	932	832	850	3,352
Percent	0.0	22.0	27.8	24.8	25.4	100.0
Total						
Number	9	1,711	1,696	2,145	2,639	8,200
Percent	0.1	20.9	20.7	26.2	32.2	100.0

Table 27. Mean length and sex ratio of the chinook catch from the North Peninsula, 1986.

Area	Length mm			Sex			
	Number	Mean	SE	Number	Male	Female	M:F Ratio
Nelson Lagoon Section	1,340	738	4	1,513	590	923	0.6 : 1
Harbor Point to Cape Seniavin	851	713	5	935	328	607	0.5 : 1
Total	2,191	728 <sup>a</sup>		2,448	918	1,530	0.6 : 1
Total	2,600	592 <sup>a</sup>		2,941	1,532	1,409	1.1 : 1

<sup>a</sup>Weighted mean.

Table 28. Age composition of the coho catch from the North Peninsula, 1986.

Area	-----AGE GROUP-----				Total
	1.1	2.1	3.1	4.1	
Nelson Lagoon Section					
Number	4,286	69,429	25,453	117	99,285
Percent	4.3	69.9	25.6	0.1	100.0
Ilnik Lagoon					
Number	177	2,392	797	0	3,366
Percent	5.3	71.1	23.7	0.0	100.0
Harbor Point-Cape Seniavin					
Number	1,357	8,032	1,992	0	11,381
Percent	11.9	70.6	17.5	0.0	100.0
Cape Seniavin-Strogonof Point					
Number	225	2,292	1,483	0	4,000
Percent	5.6	57.3	37.1	0.0	100.0
Total					
Number	6,045	82,145	29,725	117	118,032
Percent	5.1	69.6	25.2	0.1	100.0

Table 29. Mean length and sex ratio of the coho catch from the North Peninsula, 1986.

Area	Length mm			Sex			
	Number	Mean	SE	Number	Male	Female	M:F Ratio
Nelson Lagoon Section	1,876	590	1	2,078	1,132	946	1.2 : 1
Harbor Point to Cape Seniavin	521	590	2	624	293	331	0.9 : 1
Cape Seniavin to Stroganof Point	89	612	4	110	47	63	0.7 : 1
Ilnik Lagoon	114	610	3	129	60	69	0.9 : 1
<hr/>							
Total	2,600	592 <sup>a</sup>		2,941	1,532	1,409	1.1 : 1
<hr/>							
Total	2,600	592 <sup>a</sup>		2,941	1,532	1,409	1.1 : 1

<sup>a</sup>Weighted mean.



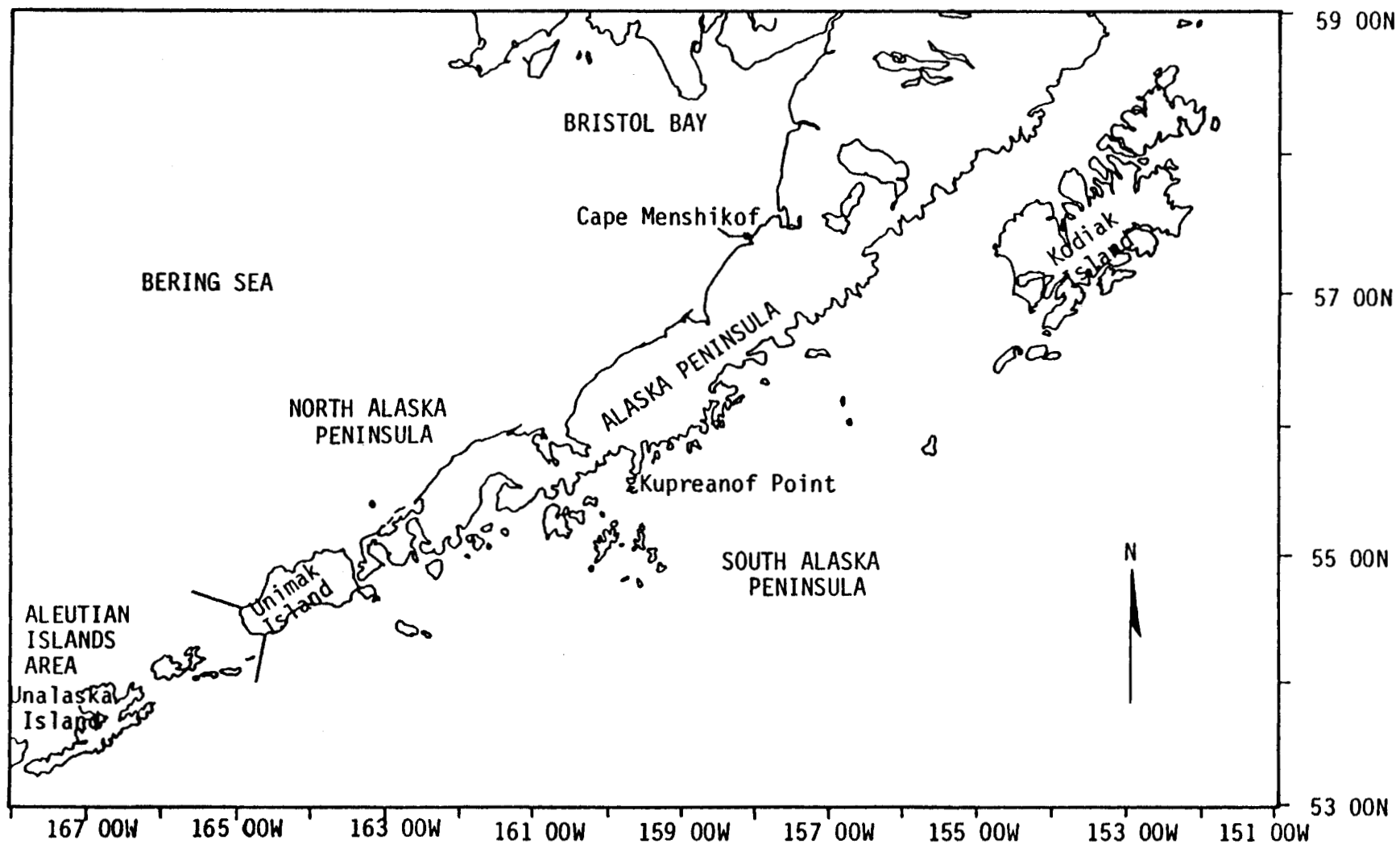


Figure 1. Map of the Alaska Peninsula-Aleutian Islands Management Area, the study area on the Pacific portion of the map is from Kupreanof Point to Unalaska Island and on the Bering Sea from Unalaska Island to Cape Menchikof.

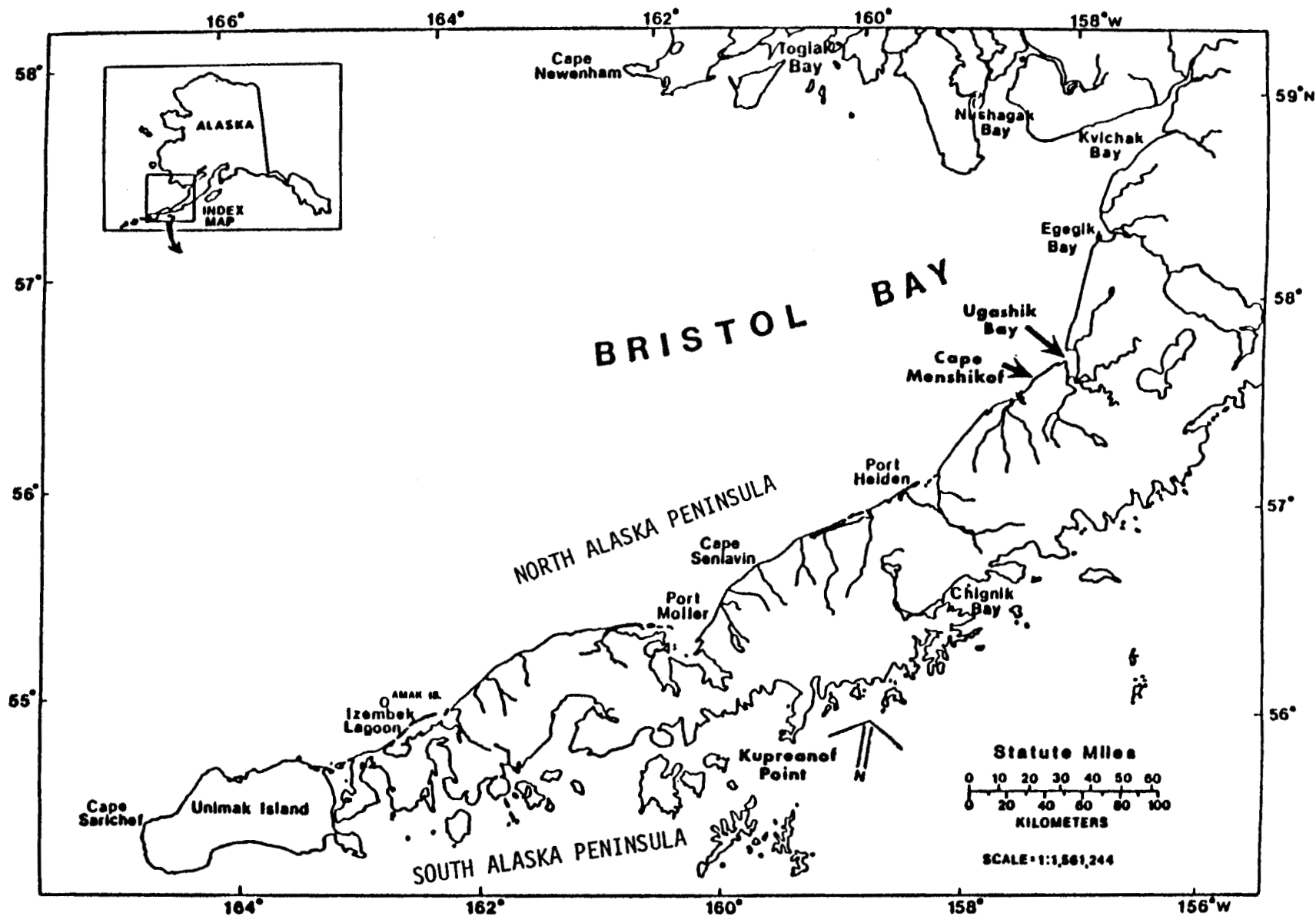


Figure 2. Map of the Alaska Peninsula from Kvichak Bay to Unimak Island.

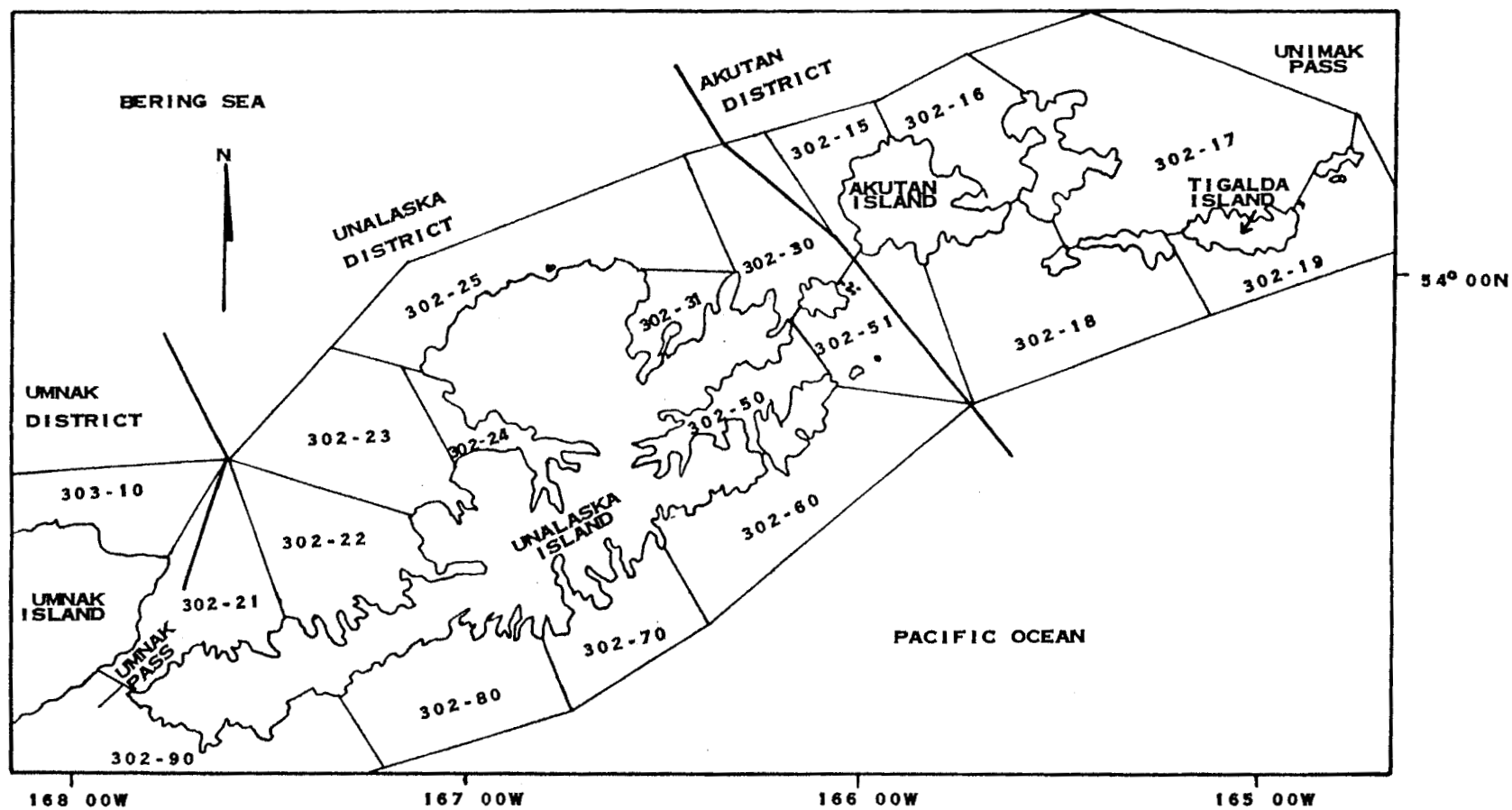


Figure 3. Map of the Aleutian Islands Management Area from Umnak Pass to Unimak Pass with the statistical salmon fishing areas defined.

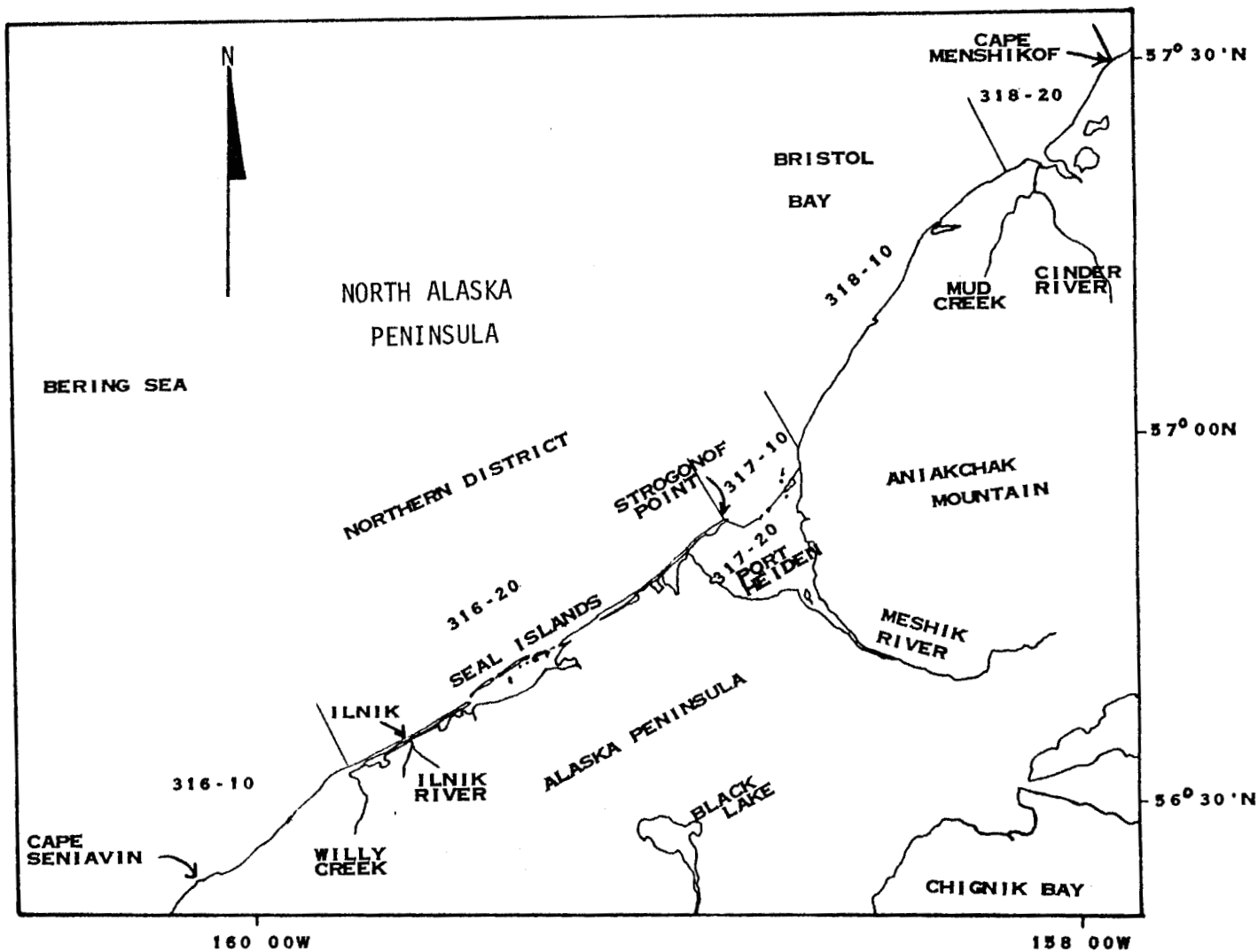


Figure 4. Map of the Alaska Peninsula Management Area from Cape Seniavin to Cape Menshikof with the statistical salmon fishing areas defined.

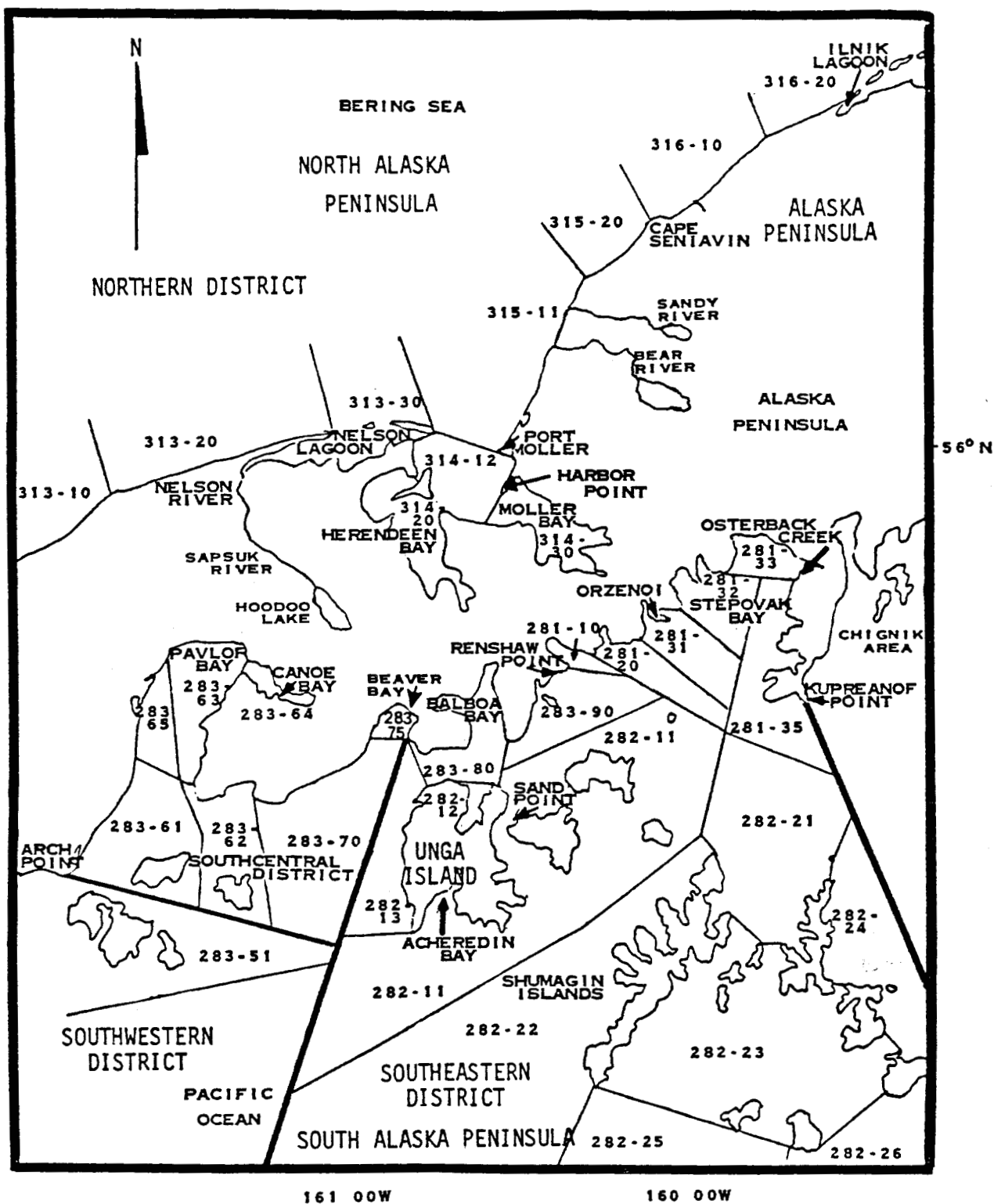


Figure 5. Map of the Alaska Peninsula Management Area from Arch Point to Kupreanof Point with the statistical salmon fishing areas defined.

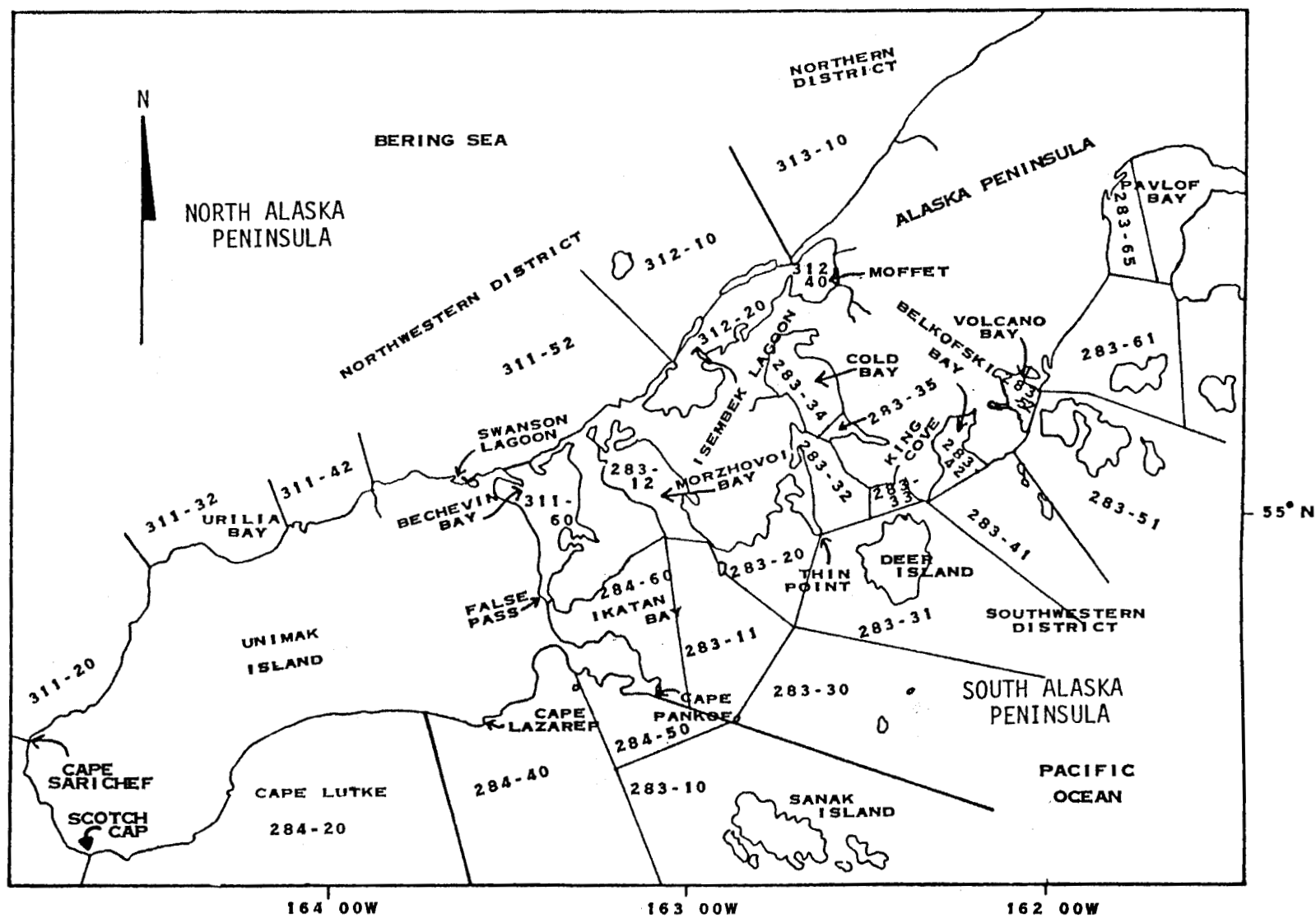


Figure 6. Map of the Alaska Peninsula Management Area from Cape Seniavin to Cape Menshikof with the statistical salmon fishing areas defined.

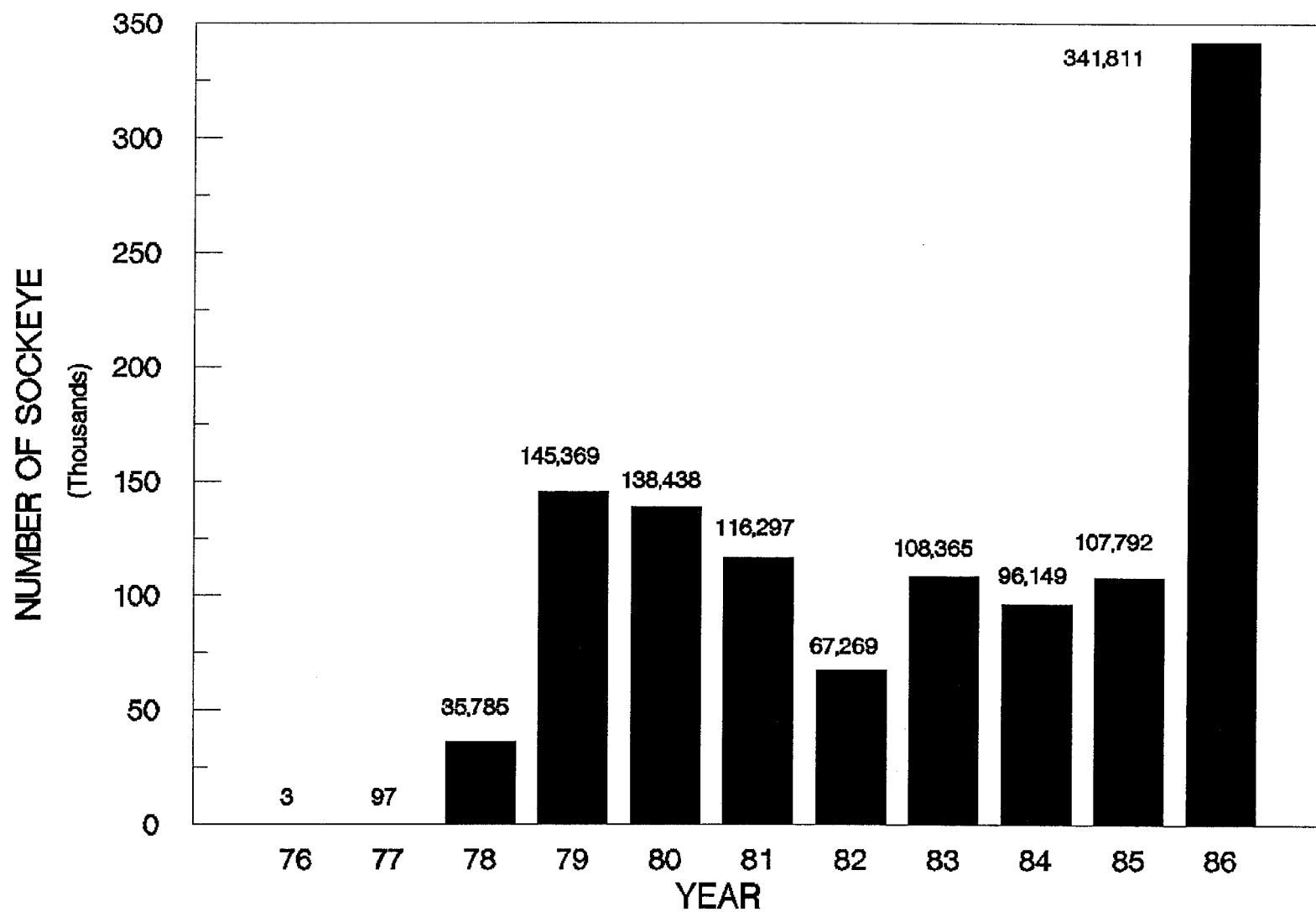


Figure 7. Shumagin Island Section sockeye harvest after June, 1976-86.

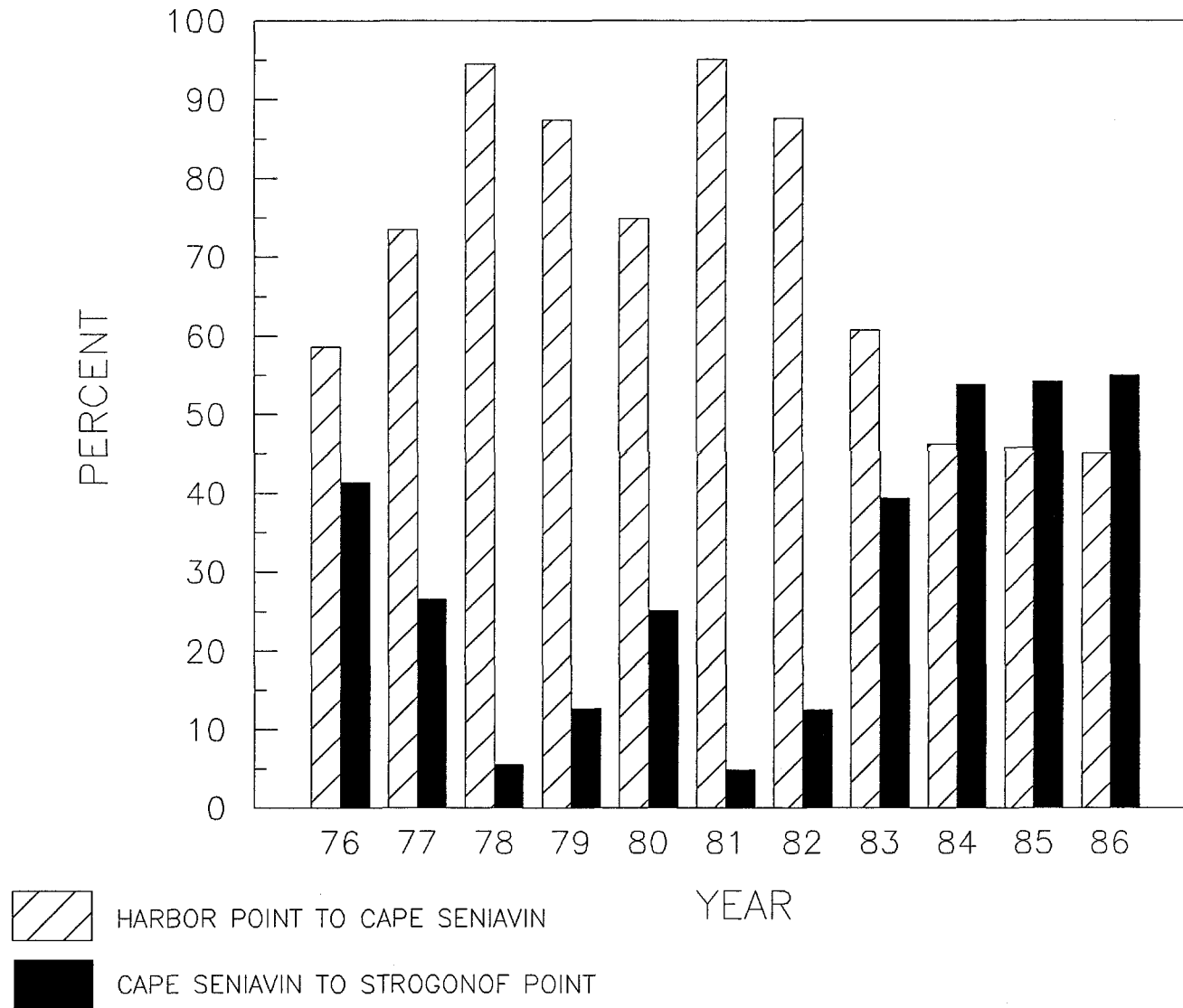


Figure 8. Distribution of the sockeye catch between the areas of Port Moller to Cape Seniavin and Cape Seniavin to Strogonof Point.



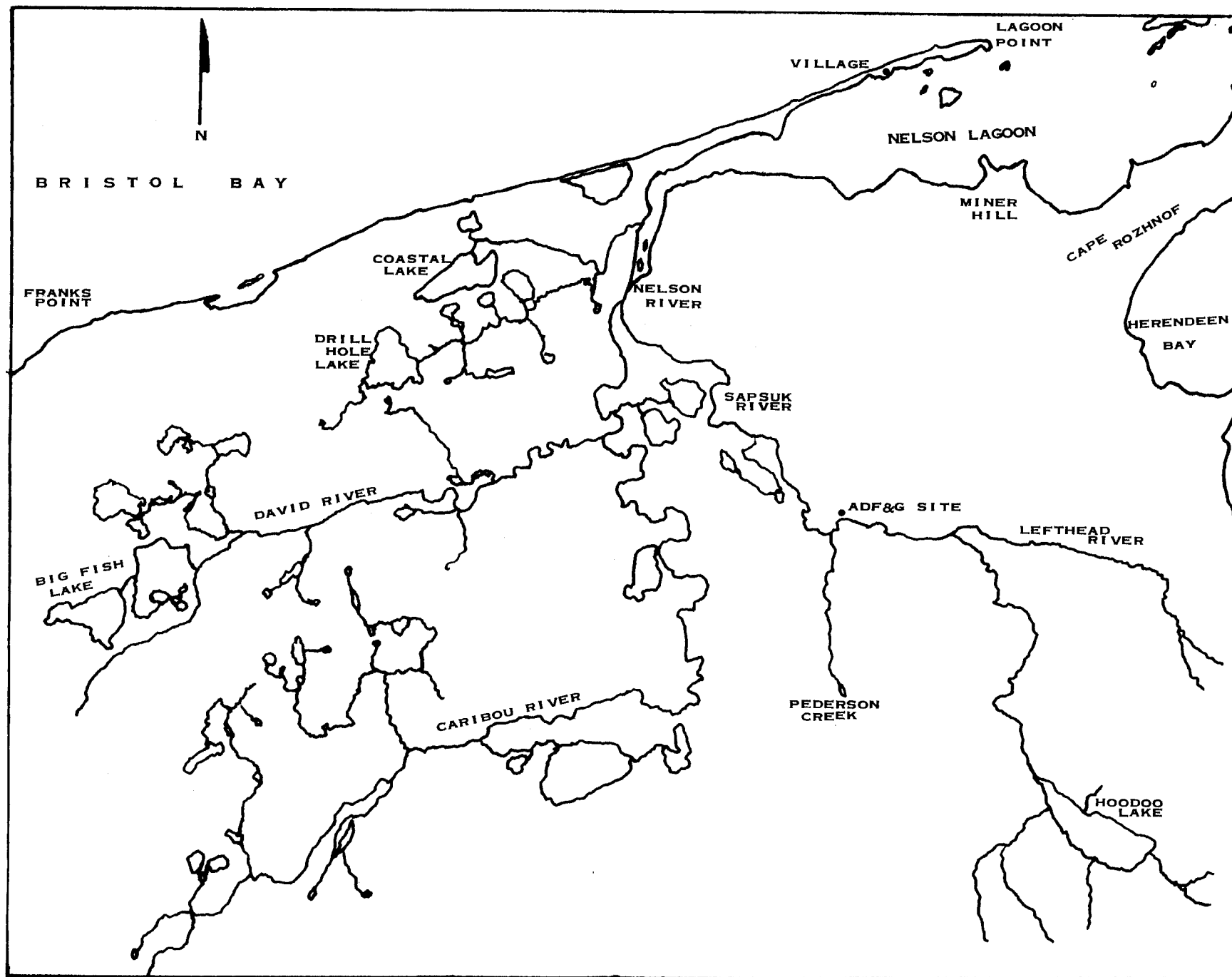


Figure 9. Map of the Nelson Lagoon drainage.

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